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Corporate Taxes and the Assessment of Utility Operating Property. JAMES W. MARTIN
Urban Decentralization ..... HOMER HOYT
Crop Insurance and Farm-Income Stabilization ..... J. C. CLENDENIN
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The Farmer in the Groupistic Regime

By HENRY C. TAYLOR*

IN THIS paper especial attention is given to the interoccupational distribution of goods and services, as influenced by the limitation of competition. The farmers' major economic problem in recent years has had to do with the ratio at which farm products have exchanged for the goods and services of those engaged in other occupations. Much of the time since 1921, at least five carloads of farm products have been sent to the city in exchange for the quantities of city products received prior to the World War for four carloads of farm products. These exchanges are dealt with in economic statistics largely in terms of price ratios. In using the price figures, it is of vital importance to keep in mind that the improvement of price ratios may not help the farmer materially if he simply sends less goods to the market in order that the price he receives may be more nearly comparable to the price he pays. The thing which is required to improve the well-being of farmers is an increased production of city goods to be exchanged for farm products on a basis which will provide an abundance of all kinds of products for all producers in the city and in the country, in proportion to the skill and energy contributed by each.

We are speaking here of farmers engaged in commercial agriculture. The farmers who produce primarily for the satisfaction of their own wants are, of course, little affected by the ratios of exchange. Their well-being depends upon their opportunity and their efficiency as producers. This is true of a very high percentage of the farmers of the world today, particularly in India and China. It is true, also, in many of the less fertile regions of the United States. No place has been found, however, where self-sufficing farmers are able to secure a high living standard. Of these we are not now speaking, but rather of the farmers in the fertile regions where cotton, corn, wheat, tobacco, fruits, vegetables, dairy products, meat, and wool are produced in large quantities primarily for the market, and where the farmers buy in the channels of commerce most of the things they consume, as well as the tools, machinery, fertilizer, etc., required for production.

For the commercial farmer, the quantity he may produce and the ratio at

* Chicago, Illinois.

which he may exchange his products for the goods and services of others determine his well-being. Commercial agriculture gives the only hope for high living standards for farm people, but this hope can be realized in full only under a national economy which insures an equitable basis of exchange of the goods or services of one occupational group for the goods and services of the others. The classical economists believed that, with freedom of enterprise, competition would result in the production of abundance of all kinds of goods and their exchange at fair ratios, that the relative prices of the various products would be such that the producer of each of the various goods and services would receive in exchange for his products a supply of the products of others, in proportion to his contribution to others. But the discovery that certain producers and service agencies possessed the power to limit competition, and thus influence prices, revealed the fact that competition could not always be depended upon to insure fair exchange ratios for goods and services. This led to the imposing of government restrictions intended to restore competition or to guarantee fair prices where monopoly is inevitable. The Sherman Anti-Trust Law, the Federal Trade Commission, and the Interstate Commerce Commission embodied major prewar efforts of the United States Government to maintain fair prices.

The Problem and Proposed Programs

The problem of securing greater economic well-being for farmers has been approached first from one angle and then another. During the first decade of the 20th century, the farm leaders and agricultural economists of the United States assumed that competition, supplemented by governmental control of monopolies, could be counted upon to provide a fair basis of exchange of their products for the products of those in other occupations. Their attention was directed almost wholly to the problem of efficiency in production. Their studies included the economical size of farms, the right combination of enterprises with a view to maximum economy in the utilization of labor and equipment, questions pertaining to the relation of landlord and tenant, and the means of acquiring land ownership on the part of farmers through savings from their profits and the use of credit facilities.

During the second decade of the present century, the focus of interest of farm leaders and agricultural economists was shifted to the problem of agricultural marketing. Farmers had come to believe that the benefits resulting from increasing efficiency in production were being absorbed by middlemen. Government regulation was urged not only of railway rates, but also of the charges for marketing facilities and services. Cooperation was advocated as a means of reducing the middlemen charges in buying as well as in selling. In the local processing and marketing of farm products, the cooperatives were highly successful in reducing local middlemen charges. For a few years after the World War, cooperation was even looked upon by many popular leaders as the method to be followed in maintaining fair exchange ratios between staple farm products, such as wheat, cotton, and tobacco, and the things which farmers buy.

The third decade of this century revealed clearly that, although farmers were increasing their efficiency in production and marketing, they were obtaining an ever decreasing per capita share of the national income. In the period from 1910–14, farmers and their families representing 34% of the total population received 17% of the total na-

tional income. In the period from 1930–34, the agricultural population was 25.2% of the total and agriculture received only 8.7% of the total national income (Table I).

The study of the ratio at which goods were exchanged, in terms of price ratios, showed that, following the depression of 1921, the prices of the things farmers buy remained relatively high, whereas the prices of farm products fell to low levels. The maintenance of the high prices of the things farmers buy was attributed in part to a relaxation of the efforts of the Department of Justice and the Federal Trade Commission to maintain competitive conditions among producers, and in part to the development of *institutes*, the function of which was to bring together the leaders in each line of production or distribution for the promotion of their common interests, and particularly to so limit production as to give their products a high ratio of exchange for the products of others. These institutes are believed to have wielded considerable influence during the period from 1921 to 1929 in reducing price competition in a very large number of lines of production. The protective tariff, which in itself accounted for the limited supply and high prices of many products, provided a national setting for the system of limitation of competition and price control.

Competition Limited

Organized labor, sheltered by the immigration laws and aided by federal legislation, has been successful in maintaining wage rates on a high level. For the five years, 1930–1934, wage rates per hour were 102% above the prewar level, whereas the cost of living was only 46% higher than the prewar level. On the other hand, for the same period, the prices received for farm products were 12% *below* prewar prices and the prices farmers paid for food, clothing, building material, machinery, fertilizer, and other supplies required in farming were 22% *above* prewar prices. Thus, while the purchasing power of the wage scale was 38% above prewar, the purchasing power of farm products was 28% below. (See Table II and Charts I and II.)

While labor and capital were finding means of maintaining wages and prices behind tariff walls, the major staples of agriculture were still produced for foreign as well as for domestic markets, and benefited neither by the protective tariff, the immigration law, nor by concerted action in maintaining prices. The prices of the things farmers sell continued to be determined by free competition, whereas the prices of the things they buy were more and more subjected to groupistic control; hence the ratio at which farm products exchanged for city products was unsatisfactory to the farmer.

TABLE I. AGRICULTURE'S SHARE OF THE NATIONAL INCOME*
(Averages for 5-year periods)

Years	Total National Income (Millions)	Agricultural Income		Total Population (Thousands)	Farm Population	
		Amount (Millions)	Per Cent of Total		Number (Thousands)	Per Cent of Total
1910–14	$30,067	$5,108	17.0%	94,374	32,105	34.0%
1915–19	46,575	8,939	19.2	101,466	31,904	31.4
1920–24	62,739	8,335	13.3	109,040	31,486	28.9
1925–29	76,204	8,407	11.0	117,364	30,532	26.0
1930–34	55,906	4,881	8.7	124,351	31,349	25.2

* Source of data: United States Department of Agriculture, Agricultural Adjustment Administration, "Agriculture's Share in the National Income," October, 1935.

Farmers Enter the Groupistic Struggle

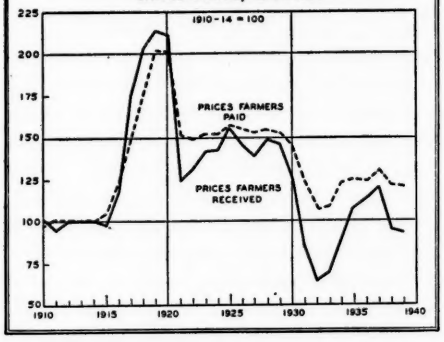
When the agricultural economists saw clearly that the major difficulty was arising not so much from low prices for farm products as from the high prices paid for the things the farmers buy, they started an educational campaign. Month by month, price ratios were published. The index of farm prices was placed alongside the index of the prices of things which farmers buy. This educational work was effective. It was not long until the center of interest of the more alert agricultural leaders shifted to the problem of parity prices. More favorable price ratios and parity incomes for farmers became the goal. But how were parity prices to be secured—through leveling down or leveling up?

TABLE II. ANNUAL INDEX NUMBERS OF THE PRICES FARMERS RECEIVED, PRICES FARMERS PAID, HOURLY EARNINGS OF WAGE WORKERS (EXCLUSIVE OF AGRICULTURE), COST OF LIVING, AND FACTORY PAYROLLS, 1910–1939*

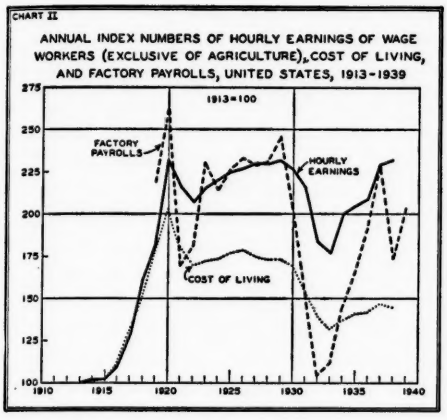
Year	1910–1914=100		1913=100		
	Prices Farmers Received (1)	Prices Farmers Paid (2)	Hourly Earnings of Wage Workers (3)	Cost of Living (4)	Factory Payrolls (Estimated) (5)
1910	102	98			
1911	95	101			
1912	100	100			
1913	101	101	100	100	
1914	101	100	102	101	
1915	98	105	102	102	
1916	118	124	109	110	
1917	175	149	127	130	
1918	202	176	161	152	
1919	213	202	182	176	219
1920	211	201	232	202	262
1921	125	152	216	180	169
1922	132	149	207	169	181
1923	142	152	216	172	230
1924	143	152	220	173	214
1925	156	157	225	177	226
1926	145	155	227	179	233
1927	139	153	230	175	229
1928	149	155	230	173	231
1929	146	153	232	173	246
1930	126	145	227	169	200
1931	87	124	216	154	151
1932	65	107	184	139	104
1933	70	109	177	132	112
1934	90	123	200	137	144
1935	108	125	205	141	165
1936	114	124	209	142	192
1937	121	130	230	147	229
1938	95	122	232	145	174
1939	93	121			203

* Sources of data:
Cols. (1) and (2). U. S. Dept. of Agr., *Agricultural Statistics*, 1939, pp. 496–7; and current issues of U. S. Dept. of Agr., *The Agricultural Situation*.
Col. (3). Computations based on data given in U. S. Dept. of Agr., *Agricultural Statistics*, 1939, p. 506.
Col. (4). Computations based on data given in U. S. Dept. of Labor, Bur. of Labor Statistics, "Changes in Cost of Living," Serial No. R. 1023, Sept. 15, 1939.
Col. (5). Computations based on data given in U. S. Dept. of Labor, Bur. of Labor Statistics, "Employment and Payrolls," Serial Nos. R. 1007, Aug., 1939 and R. 1083, Jan., 1940. In estimating these index numbers, the assumption was made that the average level of hourly earnings (Col. (3)) and of factory payrolls was the same in the 1924–28 period.

CHART I
ANNUAL INDEX NUMBERS OF THE PRICES FARMERS RECEIVED AND OF THE PRICES FARMERS PAID, UNITED STATES, 1910 – 1939



The leveling up of the prices of farm products through limitation of production might produce balanced scarcity. Leveling up the quantities of industrial products to be exchanged for the given supply of farm products might produce balanced abundance, but this terminology had not yet been developed. Among the leaders there were those who believed that the solution of the problem lay in leveling down the prices of things farmers buy through a frontal attack upon excessive protective tariffs and upon price-fixing in industry, as well as upon excessive charges for middlemen services. Others contended that under



the administration then in power (1921–1932), it would be futile to call for so sound a political economy because of the opposition of industrial capital and labor; that the only hope lay in a "back door attack" upon the tariff by asking for "equality for agriculture" through an equalization fee and by counterbalancing the restriction in production in other occupations by the restriction of agricultural production. No one among the agricultural economists or prominent farm leaders of the time claimed this to be good political economy, but in the end all agreed that it was the only available expedient. They believed it necessary for farmers to participate in the groupistic struggle if they were not to be exploited continuously. They hoped that the economic war among the groups might lead to a peace and that justice might prevail.

Samuel Gompers helped give this groupistic turn to the agrarian movement. At the National Agricultural Conference in Washington in January, 1922, Gompers described the methods used by organized labor. He explained to the farmers that he had advised laborers to take all their punishment in unemployment rather than in wage reduction. He then pointed his finger at the assembled farmers and said, "Go thou and do likewise." Thus, it came to pass that farmers entered the groupistic struggle calling for price controls in the form of the McNary-Haugen Bill, the Export Debenture Scheme, and the Domestic Allotment Plan, all of which had for their purpose the restoration of price ratios and the reestablishment of parity incomes for farmers.

The Federal Farm Board, established in 1929, was the first actual response by government to this demand of the farmers. It was not what the farmers had asked for and it was not a success, but its failure was not attributable to any lack of willingness, interest, or ability on the part of members of the Board. They were assigned an impossible task, and nature did not give them a break. With a change in administration in 1933, the Government did not reverse the trend and turn to the restoration of the competitive system, but rather put on full steam ahead to solve the economic problem through artificially created scarcity. The Farm Board was replaced by the Agricultural Adjustment Administration which, when supplemented by special laws providing for loans on cotton and other products, carried forward the major market-control practices of the Farm Board, and adopted the principle of limitation of production which had been urged by the Farm Board as necessary to market stabilization. In general, the purpose of the AAA was to put the farmers in a position to hold their own in the interoccupational groupistic conflict over the interoccupational distribution of the national income. (See Table III.)

But no sooner was the AAA created than the NRA was set up to consolidate and legalize all that had been gained clandestinely and otherwise by both labor and capital through wage and price control. In one year, the NRA made more progress toward unification of the

TABLE III. PERCENTAGE DISTRIBUTION OF THE NATIONAL INCOME PAID OUT, 1934*

	Compensation of Employees				Dividends	Interest	Entrepreneurial Payments	Not Designated
	Total	Salaries and Wages	Salaries	Wages				
Mining	83.5	82.1	14.2	67.9	10.2	3.2	3.1	0.0
Coal, anthracite	—	91.9	9.6	82.3	0.6	5.7	—	1.8
Coal, bituminous	—	92.3	8.8	83.5	1.7	2.3	—	3.7
Metal	—	60.5	11.8	48.7	33.8	4.9	—	0.8
Non-metal	—	64.7	16.6	48.1	26.0	5.9	—	3.4
Oil and gas		76.3	23.0	53.3	14.0	2.0		7.7
Manufacturing	84.6	83.9	22.8	61.1	12.0	1.6	1.8	0.0
Food and tobacco	—	71.7	17.0	54.7	21.5	2.0	—	4.8
Paper, printing and publishing	—	88.2	34.6	53.6	6.9	2.4	—	2.5
Textiles and leather	—	93.1	16.7	76.4	4.9	—	—	2.0
Construction materials and furniture	—	89.2	19.5	69.7	5.9	1.3	—	3.6
Chemicals and petroleum refining	—	58.8	17.2	40.8	36.2	3.6	—	2.2
Metals and metal products	—	87.2	19.2	68.0	9.5	1.6	—	1.7
Miscellaneous and rubber	—	82.8	20.9	61.9	10.1	3.7	—	3.4
Construction	81.2	79.5	17.0	62.5	1.9	1.1	15.8	0.0
Transportation	71.8	70.0	—	—	6.4	13.4	8.4	0.0
Steam railroads, Pullman and express	75.0	72.6	—	—	5.2	19.8	0.0	0.0
Steam railroads	74.0	71.7	21.8	49.9	5.4	20.6	0.0	0.0
Pullman	102.0	100.2	28.3	71.9	−0.1	−1.9	0.0	0.0
Railway express	97.4	95.2	46.1	49.1	0.1	2.5	0.0	0.0
Water transportation	—	92.0	—	—	2.3	3.0	—	2.7
Motor transportation	—	59.3	—	—	3.5	1.7	—	35.5
Street railways	—	63.7	—	—	17.5	18.0	—	0.8
Air transportation	102.8	102.8	—	—	0.1	−2.9	0.0	0.0
Pipe lines	—	47.2	—	—	48.9	2.8	—	1.1
Communication	66.1	64.5	—	—	26.3	7.6	0.0	0.0
Telephone	62.8	61.3	—	—	29.6	7.6	0.0	0.0
Telegraph	91.9	89.1	—	—	0.5	7.6	0.0	0 0
Electricity and manufactured gas	34.2	33.6	—	—	26.3	39.5	0.0	0.0
Trade	72.2	72.1	—	—	3.7	0.7	23.4	0.0
Wholesale	87.5	87.4	—	—	4.9	0.6	7.0	0.0
Retail	64.8	64.7	—	—	3.1	0.7	31.4	0.0
Finance	—	—	—	—	—	—	—	—
Banking	71.2	70.9	—	—	28.8	0.0	0.0	0.0
Insurance	106.7	106.1†	—	—	2.1	−8.8	0.0	0.0
Life	97.5	97.2†	—	—	2.5	0.0	0.0	0.0
Other than life	115.2	114.5†	—	—	1.8	−17.0	0.0	0.0
Real estate	9.0	—	—	—	0.8	41.4‡	48.8§	0.0
Service Industries	62.8	62.4	—	—	0.8	0.9	35.5	0.0
Professional	41.7	41.0	—	—	0.1	0.1	58.1	0.0
Personal	68.7	68.0	—	—	0.7	1.7	28.9	0.0
Recreation and amusement	79.6	79.3	—	—	3.8	4.7	11.9	0.0
Domestic	100.0	100.0	—	—	0.0	0.0	0.0	0.0
Business	76.5	76.5	—	—	5.4	0.2	17.9	0.0
Miscellaneous	37.6	37.6	—	—	1.8	0.4	60.2	0.0
Government	79.6	55.3	—	—	0.0	20.4	0.0	0.0
Agriculture	15.8	15.8	—	—	0.0	5.4	78.8	0.0

* U. S. Dept. of Commerce, Bur. of Foreign and Domestic Commerce, "National Income in the United States," 1929–35, 1936.
† Includes commissions and agents' compensation.
‡ Interest on corporate long-term debt and on individuals' mortgages.
§ Net rentals of individuals.

various branches of industrial production than had been made in 12 years in Italy. The NRA had in it the potentiality of more than counterbalancing any help the AAA could possibly give to the farmers.

In May, 1935 the Supreme Court chloroformed the NRA and in January, 1936 the major part of the AAA was declared unconstitutional. Since the NRA was brought to a close, industrial management has again found itself intermittently subject to the Sherman Anti-Trust Law and the Federal Trade Commission. Agriculture has been given a new AAA intended to accomplish the purpose of the original act. Labor has been given the Wagner Act which may prove more effective than the NRA in giving organized labor control over wage rates and conditions of labor. The serious question which arises alike with respect to the AAA and the Wagner Act relates to whether higher prices for farm products secured through artificial scarcity and high wage rates per hour accompanied by widespread unemployment can be expected to provide better living standards for either the one or the other of these two groups of working people.

The Interdependence of the Groups

While wage rates per hour have remained high, payrolls have been at a low level much of the time. High wage rates have been accompanied by widespread and protracted unemployment. Unemployment has lessened the demand for farm products without a corresponding relaxation in the prices of the things farmers buy. *The wage rates per hour in industry, in transportation, and in the middlemen services determine, in a large measure, what farmers pay for what they buy; but it is not the wage rate per hour, but the size of the payrolls and the number employed which determine the demand for farm products.* The wage policy of the leaders of organized labor looks too exclusively to the welfare of a limited group of workmen. It not only fails to give adequate recognition to the interests of consumers, but often fails to recognize the best interest of labor as a whole. The farmer may find a common cause with labor in maintaining stable real incomes for both laborers and farmers.

Although the system of limitation of competition in other occupations led farmers to call upon the government to help them introduce the AAA system of production and marketing control with a view to securing parity prices for their products, was the government right in responding to this request? Is it in the interest of the general welfare? Can the standard of living of the people of a nation be satisfactory where everyone is insisting upon producing less in order to secure higher wage rates and higher prices? The obvious answer to all these questions is no. Many of those who are participating in the intergroup struggle, in which each group is trying to get more and more for less and less, realize the ultimate futility of the struggle. They know that the need is for a balanced abundance instead of an all-round scarcity encouraged by the Government. There are those who question the wisdom of trying to return to the competitive system, but they are vague as to an alternative. There are others who believe the return to the competitive system is the best way out of our difficulty; that excessive and unequal limitation of price and wage competition has brought about the present depression; that restoration of competition with adequate safeguards is the quickest and safest way to open the road to full employment, full production, and a balanced abundance.

The question which farm economists

and agricultural leaders have had to face is this: Shall we make a frontal attack upon the methods used by industry and labor to limit competition and maintain rigid prices and wage scales or shall we continue to endeavor to find a means of limiting agricultural production in such a manner as to maintain the prices of farm products on a parity with the prices of things farmers buy?

The two things of basic importance in any future economic system are the abundance of economic goods and the ratio at which the products of the various occupations shall be exchanged. Many economic thinkers appear to see nothing beyond the adjustment of the conflicting interests involved in the distribution of the factory sales price of a specific product among the labor, capital, and management of that enterprise. *The fact that the price of the particular good should have a just relation to the prices of other kinds of goods produced by other people in other occupations has been too largely overlooked.*

Agricultural leaders have gradually learned that the forces which determine the ratio at which their goods exchange for the products of other occupations is determined by forces over which they personally have little control, by forces of nature, and by forces which are controlled by the representatives of the other occupations. The problem which confronts them today is whether or not they can find any means of adjusting price ratios and at the same time continue to produce abundantly.

Intergroup Cooperation

Leading agricultural economists believe that the true solution lies in a more abundant production of the things farmers may buy, under conditions of freer competition both with respect to prices and the elements of cost of production, transportation, and middlemen charges. Although the best students in the field of agriculture are of this opinion, they get more encouragement from politicians, labor leaders, and even from some industrial leaders, in trying to do for agriculture that which other occupations are doing to limit competition and maintain prices than they receive for making a frontal attack upon the whole regime of group limitation of competition. They agree that groupistic limitation of production has in it little hope of providing just ratios of exchange of farm products for the products and services of other occupations, that limitation of competition carried forward equally in all lines of production and service can result in nothing but reduced production and lower standards of living for all people of the nation. Obviously the thing which is needed is a statesmanlike approach to the problem of the interoccupational exchange of goods and services which will result in large production in all fields exchanged on a basis which will enable those of equal skill and energy to live equally well.

The condition which makes wise, statesmanlike action difficult in this field arises out of the fact that certain privileged groups are benefiting by the present system of limitation. These beneficiaries, whether they be capitalists or laborers, are in a stronger position to bring pressure to bear in Washington than are the disadvantaged groups. The result is that limitation of competition in the interest of maintaining high wages and prices has built up and maintained a vast army of unemployed or underemployed. This has resulted in the limitation of the normal flow of the surplus rural population into the cities with the accompanying damming back of rural youth who would normally seek opportunities in city occupations. Thus application of the principle of artificial limitation of com-

petition has reduced the demand of city populations for farm products and at the same time expanded the numbers of those who need to make a living by farming. The outcome is depressing for a large part of the wage workers as well as for the farmers. Obviously the solution lies in getting everyone to work at producing more goods to be exchanged among the workers of the different occupations.

The approach to the solution of this problem would seem to lie in the substitution of intergroup cooperation for intergroup conflict; the substitution of statesmanship economics for groupistic economics; the substitution of the general welfare as the goal instead of seeking to benefit one group at the expense of another. The writer believes that many members of the capitalist groups, of the labor groups, and of the farm groups feel dissatisfied with groupism. He has met business men in the fields of manufacturing, transportation, and commerce, and likewise leaders in the fields of agriculture and labor, who would like to be able to abandon methods which are forced upon them by the very nature of the intergroup conflict. The solution of the present national economic problem may be found when the leaders of the management groups, the labor groups, the agricultural groups, and the political groups sit down together and agree to cooperate in promoting the general welfare.

This calls for a political economy which will encourage balanced abundance and parity real incomes for comparable services. It is a function of government to respond to this need by discouraging selfish groupistic policies and by developing a truly national economic policy. The government should not be taking a hand on all sides in the intergroup struggle. The government should take the lead in developing the rules of the game in the interest of the general welfare, and should serve as the umpire. The means of accomplishing this end is subject matter for intergroup conferences and calls for a high order of statesmanship on the part of leaders in agriculture, industry, and labor, as well as in the Congress and in the White House.

Corporate Taxes and the Assessment of Public Utility Operating Property

By JAMES W. MARTIN*

PROGRESS in the valuation of public utility—including railroad—property for taxation ad valorem has been substantial in recent years. The abandonment of the gross receipts tax in California to resume the ad valorem plan gives particularly eloquent evidence of this advance in the light of the exhaustive study preceding adoption of the gross receipts basis[1] and the equally searching analysis on which the case for the more recent change rested.[2] The extraordinary volume of official, semi-official, and unofficial literature gives still further indication of current study looking toward increasing precision in the appraisals.[3] One of the most insidious but unobtrusive sources of error now apparently characterizing valuation practice in all states, except one, which use the income-capitalization method, requires analysis.[4] I refer to the policy of deducting federal and state business income, capital stock, excess profits, and other *corporate* taxes in arriving at the operating income to be capitalized.

The deduction of taxes in computing earnings is based on the common sense judgment that the income which is significant for valuation purposes is that income which owners of the equities in a business are entitled to receive without further reductions. Ordinarily this point of view is so self-evident that it is accepted without critical examination. In the instance of corporate taxes, as distinguished from property and other taxes on the operating entity itself, the deduction has been approved; but close study shows that the case for it, even accepting the common sense judgment, is by no means obvious.[5] The error arises from the fact that dissimilar abstractions are treated as though they were identical: One is the utility as an operating unit, and the other is the corporation owning utility property. Of course it is sometimes true that a utility does nothing except operate a public service enterprise; sometimes it owns no other property.[6] Frequently—even characteristically—however, that is not the case. The railroad or electric light concern owns many items of non-operating property and enjoys income and incurs expenses of many sorts wholly unrelated to its transport or electric utility business.

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[1] *Report*, Commission on Revenue and Taxation, State of California, 1906, especially Part III, c's. 1–5 inclusive and c. 8; and *Report*, Commission on Revenue and Taxation, 1910.

[2] *Final Report*, California Tax Commission, 1929, especially Part II. Note also *Report*, Joint Legislative Committee on Taxation, Legislature of California, 1931, especially pp. 26 ff. In the *Summary Report*, California Tax Research Bureau, State Board of Equalization, Dec. 1, 1932, p. 12, conclusions regarding the subject matter of the present study are stated; but no evidence is presented.

[3] A manuscript bibliography, including a table of cases, has been prepared under my supervision. It totals over 20 pages. The symposiums at the last three national tax conferences held under the auspices of the National Tax Association and published in the *Proceedings* (1937, 1938, 1939) are significant.

[4] Cf. for a kindred discussion, which, however, does not attack the same problem, Jesse V. Burkhead, "The Changing Incidence of Public Utility Taxation," 15 *Journal of Land & Public Utility Economics* 383 (November, 1939). *Galveston Elec. Co. v. City of Galveston*, 258 U. S. 388 (1921), has been regarded as bearing on the point; but that view seems far-fetched.

[5] It will be readily apparent that the valuation of the property is conceived to be the objective of the appraisal. The fortunes of stockholders, from whose share of the product taxes must ultimately be deducted, are not a point at issue.

[6] Even so, the utility as such and the corporation are two entities.

It may be desirable to distinguish explicitly between taxes referred to as those imposed on the utility as an operating entity and those on the corporation as such. Obviously, all taxes on utility property (whether measured by gross receipts or by capital value), franchise taxes on the privilege of engaging in the utility business (whether measured by gross receipts, physical volume, number of equipment units employed, operating payrolls, or otherwise), and license taxes on performance of particular utility services (as, for instance, liquor and other special licenses required of railroads and motor carriers in some states) are chargeable against utility revenues. To enjoy utility income these obligations must be met by the operating entity as such. Thus, they are as appropriate deductions from operating revenues as are expenses for labor or supplies employed in carrying on utility functions.

On the other hand, a number of taxes are required by both federal and state governments which are not necessarily related to the utility operation as such—which indeed in many cases are not even collected from those owners of utility properties that are not corporations—but are required of all corporations as corporations. Among the most significant of these classes of taxes are federal and state income taxes (including those on excess profits); excises measured by income or capital stock; and a few other levies depending in amount on corporate as distinguished from utility operating facts.

In other words, some taxes are levied directly on the utility property or on the utility business. All such taxes are appropriate charges against public service operating revenues. Certain other taxes are not chargeable against a utility as such. Indeed a utility may sometimes choose whether or not it will render itself liable for such taxes. For instance, one substantial concern operating in the South and Midwest has elected to prosecute a utility business as an individual rather than as a corporation for the express reason that by so doing corporate income taxes would be avoided. In this case, and in general, such levies are not an incident of the utility business; they are accepted as a concomitant of one particular form of business organization. If they are conceived as payments for a privilege—an approach I do not propose—then the benefit paid for is that of enjoying limited liability and other advantages of the corporation as a business form—not that of engaging in a public service industry. The purpose of this paper is to show the impropriety of deducting taxes of this second variety in computing income to be used according to the method of earnings capitalization in appraising the operating property of public service corporations. In approaching valuation by capitalization, the income figure sought is the net value product available to the owners *of the utility entity* and not the owners of the corporation (as already indicated, there may be no corporation). It is queried whether consistent inclusion of an irrelevant element—corporate taxes—brings consistent results.[7]

[7] The two fundamental issues in the use of the income-capitalization method seem to be: (a) What income is to be capitalized, and (b) at what rate? This paper deals with only a small segment of the first problem and is not concerned with the second (except incidentally in clarifying the general conclusion). The point of view developed here does not appear to depend for its validity on whether the appraiser employs a five-year average of income, a one-year figure, an estimate of future income not necessarily the same as in any past year or years, or some other computation. Moreover, acceptance or rejection of the point of view introduced by Commissioner Geo. W. Mitchell that income before adjustments for hire of equipment and for joint facility rents be employed instead of net utility operating income (*Proceedings*, National Tax Conference, 1938, pp. 284 ff.) would not affect the treatment of income and other corporate taxes.

Error from Different Capitalization Structure

It is usually regarded as axiomatic that the value of property does not depend on the identity of its owner. The manner of operating a property, of course, will alter it. If a new management effects changes, the property is transformed, and its value may be affected. This fact is beside the point.

Yet by deducting *corporate* taxes in computing income for capitalization as a means of assessing *utility operating property*, the public official actually assigns to one property a value higher than that imputed to another economically identical for the sole reason that the ownership is different. Consider the case of two public utility properties precisely similar with respect to productivity, rates, prospects, management, and other economic aspects and conditions.[8] One of these is owned, however, by a corporation having a radically different capitalization structure from the other. The facts as to capitalization are as shown in Table I.

TABLE I. CAPITAL STRUCTURE OF TWO UTILITY CORPORATIONS WITHOUT NON-UTILITY PROPERTY OR BUSINESS

Item	Corporation No. 1	Corporation No. 2
Stock	$1,500,000	$1,000,000
5% Bonds	2,000,000	
Surplus	500,000	1,000,000
Total	$4,000,000	$2,000,000

To find the influence on valuation in such a case of deducting corporate net income tax, Table II has been prepared.[9] Note the difference of over $300,000, approximately 20%, in the value estimated on an earnings basis attributable solely to the fact that one owner is heavily in debt and the other is without credit obligations. Observe too that, under the particular conditions described, the method of valuation requires a much higher property tax from the corporation heavily in debt.

TABLE II. CAPITALIZATION OF INCOME FOR PROPERTY TAX PURPOSES: THE SAME TWO CORPORATIONS AS IN TABLE I*

Item	Corporation No. 1	Corporation No. 2
Net income from utility operations before deduction of income tax	$120,000	$120,000
Other income	0	0
Other deductions (except income taxes), bond interest	100,000	0
Net taxable income	20,000	120,000
Corporate income taxes	4,000	24,000
Net income from utility operations after deducting corporate income taxes	116,000	96,000
Capitalize at 6%	$1,933,333	$1,600,000

* In this and most of the following tabular illustrations, the examples have been so chosen as to introduce only one occasion of discrimination at a time. The result is analogous to an assumption that "other things remain equal."

Effect of Other Income Sources

Inequalities arise not only from deduction of corporate taxes as between corporations with differing capital structures. The inequalities attributable to sources of income aside from the utility property to be assessed are as numerous and even more emphatic among corporations.

Table III shows income data respecting three corporations also operating exactly similar properties in productivity, rates, prospects, management, and other economic and operating factors.

[8] These and all the other examples presented in this paper, except as expressly indicated, are actual cases. The figures have been altered in amount but kept substantially intact in relationships. See text following Table IV as to assumptions.

[9] The figures, in addition to being rounded, are simplified by assuming an aggregate state plus federal corporate tax rate of 20%, and by referring to this total simply as "income taxes." If all varieties of corporate taxes be included, this rate is realistic though not precisely accurate.

Note, however, that each corporation enjoys some income and incurs some expenses in respect of property not used in the utility business. The inevitable consequence is of course that, although *net income* from *utility operations* before taxes is the same, income from non-utility sources affects the liability for *corporate* income and certain other taxes.

TABLE III. VALUATION OF THREE IDENTICAL UTILITY PROPERTIES OPERATED BY CORPORATIONS HAVING VARYING AMOUNTS OF "OTHER INCOME"

Item	Corporation No. 1	Corporation No. 2	Corporation No. 3
Net income from utility operation before deduction of income taxes	$120,000	$120,000	$120,000
Other income	200,000	100,000	10,000
Other deductions	100,000	100,000	30,000
Net taxable income	220,000	120,000	100,000
Corporate income taxes	44,000	24,000	20,000
Net income from utility operation after deduction of income taxes	76,000	96,000	80,000
Capitalize at 6%	$1,266,667	$1,600,000	$1,333,333

By deducting the *corporate* taxes, as distinguished from those on *operations* or *operating property*, the third corporation has its utility assessed over 5% above the first and the second nearly 27% above. Thus, although the law requires that the two equally valuable utility properties be taxed alike, the assessor by this technical error requires one corporation to pay a fourth more than its counterpart.

One corporation studied, in respect of which no data are shown in the tables, enjoyed substantial net utility operating income before income taxes. However, this particular enterprise was largely a holding company. The non-operating properties represented several types of business other than the utility type involved. The investments were many times as productive as the utility. The total corporate taxes, therefore, amounted to more than the aggregate net utility operating income. If corporation taxes are deducted to arrive at income to be capitalized, an admittedly valuable small utility enjoying a reasonable measure of prosperity is made to appear as an enterprise without income to be capitalized, although another, equal in every respect save for ownership of certain additional (and consequently irrelevant) property, would be found on the basis of capitalized income to be worth a considerable sum.

Consequences of Capital Transactions

A third occasion of discrimination resulting from deduction of corporate taxes is found in the case of corporations which, either for operating or non-operating reasons, have sold capital assets. Clearly, if such transactions involve non-operating holdings, they do not affect the value of operating property. Even if operating property is sold early in the year, the transaction can ordinarily have no direct bearing on the value of such property owned as of the end of the year. Yet, as shown in Table IV, such transactions, through their influence on corporate taxes, may materially affect the valuations and hence the property taxes to which a utility operating entity is subjected, but only if such corporation tax payments or accruals are allowed as a deduction.

In this example, as in the instances presented in Tables II and III, there are certain artificialities, or at least abstractions. The assumption that any two or more utilities are identical can of course be only a logical device, although, as indicated previously, the figures have been derived by bringing the net income from utility operations before corporate taxes to an identity and meantime hold-

TABLE IV. VALUATION OF THREE IDENTICAL UTILITY PROPERTIES OPERATED BY CORPORATIONS HAVING VARYING EXPERIENCE IN RELATION TO NON-OPERATING ASSETS

Item	Corporation No. 1	Corporation No. 2	Corporation No. 3
Net income from utility operations before deduction of income taxes.....	$120,000	$120,000	$120,000
Other income (sale of non-operating capital asset held 20 mos.)...	80,000	0	0
Other deductions (capital loss from sale of non-operating capital asset held 20 mos.).....	0	0	70,000
Net taxable income*.....	200,000	120,000	50,000
Corporate income taxes*.....	40,000	24,000	10,000
Net income from utility operations after deducting income taxes.....	80,000	96,000	110,000
Capitalize at 6%.	$1,333,333	$1,600,000	$1,833,333

* Actually only 66⅔% of the capital gain would be taxable or 66⅔% of the loss deductible for federal purposes (*Internal Revenue Code*, §117); in most states the entire gain would be taxable or the loss deductible. In the computation the ⅔ provision has been ignored. The data have been treated for simplicity as though the gain were fully taxable and the loss fully deductible. The provision not considered ameliorates but does not remove the inequity disclosed.

ing all other relationships constant. In the second place, if a five-year average instead of one year's earnings were employed as is customary, the last mentioned occasion of discrimination would ordinarily be greatly reduced in actual practice; in all other respects, the five-year situation is characteristically little different from these one-year data. In the third place, although these particular cases involving only one source of error at a time have been discovered, it is more usual that two or more of these causes of discrimination are found together or that the inequities though existing will be so small as to be negligible. Sometimes the concurrent appearance of two or more upsetting factors in one instance proves in some degree to be compensating, and in others the effects are cumulative. In a sense, therefore, the assumption (actual fact in these illustrations) that "other things are equal" is essential to exposition but somewhat unreal, or at least not typical.

Proposed Solution

It has been suggested[10] that one way to a satisfactory handling of the problem is to make an apportionment of corporate taxes between operating and non-operating income. Thus, it would be feasible, it was thought, to capitalize an operating income figure which would represent the net results of operations after all expenses and taxes, including corporation income taxes. A few examples will show how impractical this idea turned out to be when applied to actual cases.

Using net income as an apportionment factor, as illustrated in Table V, it is apparent that these two economically identical utilities will have corporate tax deductions which give rise to direct and unjustifiable discrimination. On this

[10] Assistant Attorney General M. B. Holifield of Kentucky when consulted by the Kentucky Department of Revenue respecting the legality of deducting or refusing to deduct federal income taxes.

The prescribed accounting methods for various classes of utilities draw this line in principle, that is, corporate taxes are required to be apportioned. See, for instance, as to Public Service Commission of Kentucky, *Uniform System of Accounts for Water Utilites*, p. 90; *Uniform System of Accounts for Electric Utilities*, p. 103. See also similar provision in Federal Power Commission *Uniform System of Accounts Prescribed for Public Utilities and Licensees*, p. 90 and Interstate Commerce Commission, *Uniform System of Accounts for Class I Common and Contract Motor Carriers of Passengers*, p. 72. Statistics derived from accounts and examination of certain individual records suggest, however, that in practice corporate income and other such taxes are often charged to utility operation. For instance, study of Interstate Commerce Commission, *Statistics of Railways in the United States*, 1938, §A-I shows that many carriers—even including those which have non-operating property and hence presumably pay ad valorem taxes on non-operating holdings—show no miscellaneous tax accruals.

basis one corporation would have for capitalization net utility operating income after deduction of corporate taxes amounting to $96,000; and the other—identical so far as utility property, business, and the operating income results obtained are concerned—would have for capitalization net utility operating income after corporate taxes amounting to $120,000. Capitalization on a 6% basis would mean that one utility property is worth $1,600,000 and its exact counterpart, $2,000,000. The result demonstrates that the method is unsound.[11] Moreover, this plan offers no pretense of correcting discrimination from variations in capitalization structures.

If one follows the plan, more usual in general practice, of making the allocation on the basis of gross receipts from utility and non-utility sources, the result, as shown in the last line of Table V, is even more discriminatory. Thus, in the case of the first corporation, it is apparent that about 75% of the tax will be charged on this basis against utility operations, although obviously only about 40% of the income produced actually comes from this source. Its economically identical counterpart, as shown in the last column of Table V, will have no income tax deduction. Use of this basis of apportionment will result in an assessment more than twice as high in one case as in the other even though the only difference is in the extent and character of the non-operating—and hence irrelevant—property.[12]

It is important to emphasize that the apportionment plan does not even attempt to resolve the discriminations growing out of varying capitalization structure. So far as I have discovered, there can be no semblance of a solution of that type of inequality save by the method suggested below.

TABLE V. ANALYSIS OF THE CONSEQUENCE OF APPORTIONING CORPORATE TAXES ON THE BASIS OF NET INCOME BEFORE CORPORATE TAXES AND OF GROSS OPERATING AND GROSS NON-OPERATING REVENUE*

Item	Corporation No. 1	Corporation No. 2
Total operating revenue	$1,000,000	$1,000,000
Total operating expenses including taxes on utility operations and property	880,000	880,000
Net income from utility operations after taxes on utility operations and property	120,000	120,000
Other income	350,000	200,000
Other deductions	50,000	350,000
Non-operating net income before corporate taxes	300,000	150,000§
Net taxable income	420,000	0
Corporate income taxes	84,000	0
Net income from utility operations after deducting corporate taxes apportioned on basis of net income before such taxes†	96,000	120,000
Capitalize at 6%	1,600,000	2,000,000
Net income from utility operations after deducting corporate taxes apportioned on basis of gross revenue‡	57,778	120,000
Capitalize at 6%	$ 962,967	$2,000,000

* This table, though realistic, is hypothetical.

† $\frac{120{,}000}{120{,}000 + 300{,}000} \times 84{,}000$

‡ $\frac{1{,}000{,}000}{1{,}000{,}000 + 350{,}000} \times 84{,}000$

§ Deficit.

Conclusion

The demonstrated inequities of deducting corporate taxes for computing net utility (or railway) operating income for capitalization purposes in estimating the value of public service (including railroad) property, considered in conjunction with the proved inadequacies of

[11] This difficulty arises in respect of "other income" less "other deductions" and income from operations only when the former is negative.

[12] One of my kindly critics has suggested simply computing and deducting the income tax on net utility operating income; but consideration will reveal that this plan would overstate the deduction, since it overlooks the necessity for distributing creditors' shares before computing corporate income taxes. It would ignore other corporate taxes as unimportant.

the one plausible solution that has been proposed, suggest the need for a further canvass of the fundamental issues. The hypothesis is offered that the solution is simple—namely, non-deduction of corporate taxes in computing income to be capitalized.

The way out of the difficulty, however, is not as easy as this statement implies. There seems no doubt but that the capitalization rate appropriate for the computation of capitalized values from operating income data would necessarily be higher if taxes were not deducted than if they were deducted. Too much emphasis can not be given to the necessity of studying the capitalization rate and making the necessary change from the procedure which would be followed were corporate taxes deducted in computing operating income as has been common in the past. Heretofore, practice has varied in the different states in respect of the capitalization rate actually used. Although 6% has been far more usual than any other and indeed has been almost universal in states which have given most study to assessment problems, nevertheless, different states appear at the present time to use rates ranging from 5% to 9% in respect of well established and profitable railroad corporations. The very fact that so wide a range is employed suggests that the problem has not been adequately examined and that thoroughgoing investigation is essential if utility corporations including railroads are to be fairly assessed. Thus, study on the basis of the refinements pointed out below will not constitute wasteful reexamination of a relationship already defined.

The method by which the proper capitalization rate can be found has been reported[13] in principle in another connection, but has not there been adapted to utility assessment. That the entire operating property, rather than merely the equities of stockholders, as in Goode's investigation,[13a] must be appraised necessitates considerable modification and a completely new accumulation of data. The proposed methodology in brief is as follows: Assuming that the appropriate capitalization rate for railroad corporations is desired for states in the South or East, the aggregate average value of stocks and bonds (less the value of non-operating property) of southern and eastern railroads which have a continuous earnings record will be accumulated for a period of years and the results in the aggregate divided into the sum of the same railroads' net railway operating income before corporate taxes for the identical period. Probably the data should include five years of operating experience; and certainly operating data for a considerable number of railroads, chosen at random, should be used.[14]

In making such a statistical analysis as is suggested here, it will be found that the most serious impediment lies in the fact that market quotations for a number of security issues are unobtainable. This problem can not be accurately solved. However, an approximation can be secured if the issue is carefully and objectively studied and if market practice rather than historical records of value are consistently employed. Reasonably accurate methods of appraising securities not traded on the market have been developed mainly for use by investors and need not be discussed here. It is important to keep in mind that the bulk of the securities of major railroad or other public service system can ordi-

[13] Richard Goode, "Valuation by Capitalization of Earnings," *Bulletin*, University of Kentucky Bureau of Business Research, July, 1939.

[13a] *Loc. cit.*

[14] This methodology, whether corporate taxes are or are not deducted, would not be accepted by all students of utility appraisals; but the general approach, so far as it has to do with meeting the issues confronted in this paper, is suggestive of the sort of adaptation needed in capitalization rate.

narily be valued from actual market quotations, and any error which arises from an honest and skillful effort to appraise unlisted securities will be obscured by the high degree of accuracy that can be obtained in respect of the principal issues of practically any of the railroad companies. The suggestion that the problem be solved by comparing actual operating income before taxes with actual average prices of outstanding securities is predicated on the view that the rate to be ascertained is the current market rate. The question to be answered is: In the security market as it is and on the basis of current transactions in railroad stocks and bonds,[15] what is the rate at which earnings before corporate taxes are actually capitalized? The problem is not whether the capitalization rate that obtains is a fair or an unfair rate of return on the market value of the securities.

The proposed method of eliminating the discrimination which results from the deduction of corporate taxes in computing income by capitalization of earnings rests on the view that the utility operating property is the entity to be valued and that this aggregation of property should be conceived separately from the corporation, partnership, or individual that owns it. The appraisal ought to be made without any reference to taxes attributable to the form of business enterprise, which an owner as such may be called on to pay. Obviously the computation of the net income of the utility must be based on the idea of deducting all taxes directly chargeable against the utility as such; but corporate income taxes, excess profits taxes, capital stock taxes, and certain other imposts[16] are imposed on corporations as corporations and not on utility enterprises as public service entities.

In brief, the estimate of the value of utility operating property ought to be exactly the same whether the owner be an individual, a partnership, or a corporation, and whether or not, if a corporation, it has a capital structure based on stocks alone or on stocks and bonds, or whether it has large property holdings additional to the utility or has little or no other property. In any event, transactions in capital items should not be permitted to interfere with or affect the appraisal that is made. The net income to be capitalized, therefore, is the amount after all charges to which the owner of the utility property is entitled without reference to any charges that may be imposed on the owner as a corporation, as a partnership, or as an individual. That the owner in his capacity of corporation, of partnership, or of individual may have to pay corporate income taxes, corporate excise taxes, individual income taxes or even poll taxes seems to be irrelevant as to the value of the utility property.[17]

[15] That is, marginal investments of capital in the industry. For reasons explained by Herbert E. Dougall and Loring C. Farwell ("A Review of Railroad Financing, 1920–1938: I. Volume and Cost of Railroad Capital," 16 *Journal of Land & Public Utility Economics* 207 (May, 1940)) rates for *new* security issues do not measure the cost of marginal capital investments in utility enterprises.

[16] As an administrative consideration it is worth observing that ordinarily an entire tax ought to be deducted or not depending on its character. Because of related considerations to those developed in this paper, however, payroll taxes should be charged to operations to the extent employees are engaged in utility activity and not otherwise.

[17] Certain students of utility appraisals have read an early draft of this paper and offered helpful criticisms: R. C. Beckett, General Attorney, Illinois Central System; Wilbur Bush, Illinois Tax Commission; J. W. Farmer, Farmer and Humble, Frankfort, Kentucky; Richard Goode, formerly Bureau of Business Research, University of Kentucky; R. D. Haun, C.P.A., University of Kentucky College of Commerce; Joel Hunter, C.P.A., Atlanta, Georgia; Charles W. Milner, Attorney, Louisville Gas and Electric Co.; A. G. Mott, Valuation Division, State Board of Equalization, California; H. Clyde Reeves, Kentucky Commissioner of Revenue; W. A. Tolman, University of Kentucky College of Commerce; H. W. Wallace, Valuation Division, Mississippi Tax Commission.

Urban Decentralization

By HOMER HOYT*

THE consciousness of the nation is becoming acutely aroused for the first time to the problem of urban decentralization. This term is used here to mean, not the break-up of metropolitan areas into small communities, which is not taking place, but an internal movement of people and land uses that is going on within the orbits of these metropolitan communities. The old compact city has burst, leaving a vacuum between the main business center and the outer area of new residential growth, that is partially filled by families on relief and creating a diffuse urban development on the periphery. Urban decentralization has not yet resulted in the complete diffusion of the dominant office building, financial, and commercial functions of the metropolis, which are still lodged in a concentrated business area near the center of the urban mass.

Urban decentralization may be defined for the purpose of this article as consisting of a movement of the residential population away from the areas near the principal office, commercial, and financial centers, where a large proportion of the white collar class still work, to areas on the outer edge of the city. This movement of population has been accompanied by changes in land uses, such as the rise of satellite business centers and the movement of industries from the center to the outer circumference of the metropolis. As a result of this outward flow of the higher income part of the urban population, we are confronted today with the problem of how to rehabilitate great masses of older residential structures and how to preserve the morale of neighborhoods in the wake of this exodus. In view of the staggering immensity of the present problem of urban decentralization, the reader may well inquire why a crisis has not risen before in the 6000 years of recorded urban history. Therefore, a brief review of past urban development seems to be necessary to bring the present problem into its proper focus.

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History of Urban Decentralization

Until the 19th century the city was a compact mass of buildings in approximately circular form frequently surrounded by a wall. There was a sharp division between city and country with an abrupt transition at the city gate. The spilling over of the city into the country in the form of a gradual thinning out of the urban mass on the outer edges did not then exist. The city assumed this compact form originally for purposes of defense. Behind its walls the citizens could find the greatest security from invasion. The lack of rapid transportation also compelled a concentration of urban living close to the market place and the shops that gave the city its cause for being. The city, moreover, was a different world from that of the country. It was sometimes a state in itself, or at least it enjoyed different laws and customs from that of the countryside.

These compact cities constantly tended to renew themselves and to rebuild any decayed parts. The buildings, particularly in medieval Europe, were usually of very durable construction. The cathedrals at the center were in the process of building for centuries. Fortifications formed a stone ring around the

city. A city was thus a durable conglomeration of buildings of a compact fortress type, and not a shifting or expanding urban mass. Within the city there was either a relative homogeneity of races or else fixed caste lines that rigidly held each social and economic class within a prescribed area or ghetto. Consequently, there was little shifting or movement of people or races within the city.

How was the problem of slum reclamation solved in these ancient cities? When housing conditions became intolerable, how was a new beginning made? There is not much direct evidence on this subject, but we know of certain historical events that must have affected the slum problem. When entire cities were destroyed, the slums as well as the palaces were demolished. In ancient Egypt a new Pharaoh would sometimes move his capital to a new site. In this way he left behind the slums as well as the monuments of his predecessor. In ancient Mesopotamia and Asia Minor when the mud huts of the common people collapsed, an entirely new city was built on top of the old. This process tended to create mounds or "heights" on flat plains that are so highly prized by Realtors. The only thing worth saving in a demolished mud house was the door which had a greater value than all the rest of the house combined. On the site of ancient Troy, nine successive cities were built on top of each other, and excavators there and elsewhere in Asia Minor find the record of civilization like a layer cake or like the strata of rocks that furnish the record of the geological past.

When these compact cities were not moved or built on top of each other, they were frequently destroyed. Ancient Nineveh was blotted out in one night. Babylon, with its fabulous walls and hanging gardens was destroyed, and nothing but a mound was left to show where the site of this mighty empire once stood. Alexander the Great fired the palace at Persepolis after he had seized the gold hoard of over a billion dollars.

> "The lion and lizard keep
> The court where Jamshyd gloried and drank deep."

Genghis Khan was allergic to cities. He destroyed them and massacred the inhabitants because he feared their fortified walls which resisted his cavalry charges, and which fostered the trade and pacific ways he did not appreciate.

Even when the city was not destroyed it did not expand on the periphery like a modern city. The Greeks sent out their surplus population like swarms of bees to a new location far from the homeland where a new city was created. Still in these old compact cities that have had a continuous existence for hundreds, even thousands of years, slum conditions must have become almost intolerable, judged even by ancient standards of sanitation. The slums of republican Rome were destroyed by the Gauls, and the blighted areas of imperial Rome were partially renovated from time to time by fires, of which Nero's fire in 64 A.D. was the most famous.

Single cities and central neighborhoods were thus destroyed in the ancient world. However, with the collapse of the Roman Empire, a whole network of urban civilization collapsed also. The population of Rome declined from a million at the time of Augustus to less than fifty thousand in the 6th century A.D. Hundreds of smaller cities and towns either dwindled or vanished. Elaborate trade routes by swift galleys over the Mediterranean, and by caravans over the network of Roman roads, were broken up with the barbarian invasions, and the whole basis for sup-

porting an elaborate urban network was destroyed.

The cities in the middle ages were small, except for Constantinople, which was the great world city and bulwark of defense against invasions of Arabs, Russians, and Mongols. There were few cities or towns with a population greater than ten thousand. The medieval world consisted of thousands of small villages or manors of a few hundred people each, nearly all of whom earned a livelihood in the open fields surrounding the village. The rise of the modern city, however, began in the middle ages. "City air makes free." The city became an island of freedom in a sea of serfs, and here modern industry and commerce began. The growth of cities was accelerated by the industrial revolution. Even before the age of steam, or by 1600, London and Paris each had approximately 200,000 inhabitants. However, by 1800 there was still not a single city in the world with a population of one million, although London closely approached it. The great expansion of urban population occurred in the 19th century and the early 20th century. By 1930 there were 38 cities in the world with a population of a million or more. In the United States from 1790 to 1930 the urban population increased from a few hundred thousand to sixty-eight million. There was a tremendous growth of cities in Germany and in all industrial nations. Large cities developed in South America and Australia, where the bulk of the continents is very thinly inhabited. Hence, urban problems and the urban slum did not arise on a vast scale until modern times.

Steam power, by concentrating people in factories and by producing a surplus in agriculture, was the prime mover in this unparalleled urban expansion. Steam power also became the first means of breaking up the old compact city. The railroad constructed for the purpose of moving goods between cities could also be utilized for suburban transportation. Hence, in the latter part of the 19th century, it became possible for some of the wealthier classes to escape from the center of the city to suburban towns on the new railroads. In the 80's cable cars, and in the 90's and early 20th century the electric surface car facilitated the expansion of urban growth to the periphery. In a few cities elevated lines and subways furnished a super form of fast transportation through crowded sections of the city. There was thus a movement within the urban mass prior to the coming of the automobile. Decentralization has been going on for 60 or 70 years. The tendency has been greater for cities to expand on their peripheries than to rebuild the centers.

Process of Decentralization

However, the problem of decentralization did not seem to become acute before the first World War. Why? This was because these movements within the compact city were believed to follow a beneficent law known as "conversion to a higher and better use." Although there was a succession of land uses within the city and constant change was going on, these forces were not regarded as causing serious problems because any gap or vacancy in the city structure was immediately filled by some land use better than or at least as good as the one that preceded it. A succession of uses was believed to occur in the following fashion. First, at the very center of the city there was a lateral expansion of retail business and also of office buildings and banks. This use, which paid the highest rent, tended to expand into the wholesale district which encircled the retail area. The wholesale area in turn as it expanded crowded into the factory zone which en-

circled the wholesale area. The factory zone in turn moved into an encircling belt of cheap workingmen's homes. Into the belt of workingmen's homes also came the newest stream of immigrants who paid high rents for crowded quarters with poor living facilities. The factory workers, who first occupied these old areas, in turn moved out to better residential areas immediately beyond the zone of workingmen's homes. The higher income groups occupied the land on the best transportation routes beyond the area of workingmen's quarters. Hence, under this beneficent process there was a constant expectation that a succession of higher land uses moving from the center in the form of concentric circles would take up any slack and prevent any decay in the urban structure. There was at all times a zone of transition or an area in the process of change from one use to another. But this situation of decay and disorganization was believed to be only temporary; it was just a prelude to the emergence of a new office building or factory on a site that was ripening for this higher and better purpose.

The increased use of the automobile and the building of concrete roads on the periphery of cities following the World War made possible decentralization on a hitherto unparalleled scale. No longer was it necessary for the population to stick to a quarter of a mile of a fixed transportation route. The urban dweller could seek hills and secluded areas hitherto inaccessible. However, in the decade of the 20's, certain factors softened the blow of urban decentralization on the structure of the groups owning property in the center of the city. The return of five million soldiers and sailors to their homes, the great internal migration of people from the country to the city, and the last flare-up of immigration from Europe put a great pressure of population upon urban housing facilities and caused a sharp rise in rents. The doubling in the cost of constructing buildings from 1915 to 1920 gave a higher value to all existing structures. Moreover, the purchasing power of the urban dweller was augmented by the full employment during the decade of the 20's, and stores from the center to the periphery did a prosperous business. Consequently, the effect of urban decentralization was not acutely felt by the owners of property in the central areas.

The crash in 1929 and the ensuing depression, however, brought the effect of urban decentralization into sharp relief. There was a reversal in the fundamental forces that had enabled land to be converted from lower to higher and better uses. In the first place, the central business districts of large cities ceased to expand laterally because the expansion was vertical in the form of tall buildings. Then with a national office building vacancy of 25% by 1933, this vertical expansion also stopped. Stores in the central business district began to feel the competition of outlying stores, and the large department stores hastened to establish branches on the outer edges of cities. Next, the central business district ceased to expand. The functions of entertainment, shopping, and finance, which were once concentrated in a "Loop" in the days of the first large department stores, the legitimate theater, and the large central downtown bank were diffused and scattered by the chain store, the motion picture theater, the radio, and the outlying bank which furnished the same facilities at widely scattered neighborhood centers.

Thus, the wholesale district encircling the central business district contracted severely because the function of storing great quantities of goods near the central business district declined as a result of

the increase of direct buying from the factory. The construction of large wholesale buildings like the Merchandise Mart in Chicago likewise contracted the amount of ground necessary for the wholesale business that was left.

Next, the factories that were formerly located near the center of the city migrated to outer belt lines where they could obtain the advantages of cheaper land which permitted one-story buildings, with their greater economy of one-story operation, and where they could retain all the advantages of transportation and of labor supply.

Next, the zone of workingmen's homes that was formerly filled by a new batch of immigrants from Europe became a decayed slum when new immigrants no longer came. The newcomers were frequently Negroes from the South with low incomes or incomes only from relief. The possibilities for conversion to a higher and better use had vanished, and in these decayed areas hardly a new single-family dwelling had been constructed in the last few decades.

Next, the area surrounding the belt of workingmen's homes in turn was becoming invaded by persons fleeing from the blighted area. Thus, the process of change now going on was one that did not automatically renew the old parts of the city. In fact, a vacuum or zone of blight was being created that steadily grew worse, and is becoming more and more decadent.

Forces Contributing to Decentralization

The problem of the decayed central areas of the city is further complicated by the increasing load of municipal taxes which falls more and more heavily on those areas at the same time that their capacity to pay declines because of lessening occupancy and lower rents. The effect of all these forces was in fact more keenly felt as a result of the decline in the level of urban rents of nearly 50% between 1925 and 1932. Since then, the recovery in rent levels has been slight even in the best neighborhoods and practically negligible in these decadent areas. At the same time the cost of repairing these old structures has remained at the peak level of the 20's. In these old areas there is a great multiplicity of land ownership. It is almost impossible to secure one solid block of land without paying an exorbitant price. A piecemeal reclamation of small sites in the midst of the slum is almost impossible. Unless a new neighborhood of sufficient size to give it an independent character is established, the new development may be snuffed out by encroachment of the surrounding slum.

Hence, it is little wonder that urban dwellers seek to escape from the city with its slums and its heavy load of taxation. They go to areas where the land is cheap because, as the radius of a city is doubled, the area of the land available for use is not merely doubled but quadrupled. There is no scarcity of urban land on the periphery of cities. The city dweller goes to areas where new communities are established, and where his children can associate with other children in his own economic and social class, and not with the children of slum dwellers. In these new areas taxes are relatively lower because there is a large proportion of new buildings, and because these new independent communities have not yet acquired the burden of taxes and the expenses of handling crime that have attached themselves to the old city.

But in this process of going to the periphery new evils have arisen. Urban settlement in the automobile age is very diffuse. In some cases there is only one house for every 20 vacant lots, as a re-

sult of extensive oversubdividing of land on the periphery. New schools and new facilities have to be built for new communities on the outer edges of the urban metropolis. Extensive subways, bridges, and widened automobile highways have been constructed to enable the city worker to get past the blighted area to his home in the suburbs. Meanwhile, the school facilities and the public utilities in the central areas are not fully used, or they are used by a population that cannot afford to pay their cost. Next, the diffusion of the city has greatly added to the load of municipal expense, and made the cost of operating the municipal organism much greater.

Such have been the forces that have suddenly made the problem of urban decentralization an acute one. The automobile has enabled the city dweller to take advantage of the laws of geometry and escape city problems by flying into the country. Conversely, it has removed the pressure to rebuild the central areas of the city.

Remedies for Decentralization

The causes of decentralization have been so powerful that it is difficult to reverse this great natural tide. If this problem can be avoided or its solution postponed, many headaches will be avoided. However, from a national standpoint, this problem cannot be ignored. The blighted areas in the midst of cities with their jungles of crime are training grounds for criminals. Their continued existence will menace the safety of our entire national structure from within. These areas are not only bad now but they are continually getting worse. The depreciation of structures in these areas is proceeding at an accelerated pace. In fact, this depreciation suggests one solution to the problem. Allow the rot and decay to continue until the buildings fall down or are demolished because of their inability to yield any income over operating expenses. This laissez-faire solution may not be accomplished until the social disorganization of our great cities is almost complete. Is it possible to conceive of an American economy in which all the good citizens live in a ring around urban communities which contain jungles of crime between this good periphery and the central business oasis? Yet, such seems to be the situation that now exists to a considerable extent, and which will come into being to an even greater degree if the natural processes are allowed to go on unhindered. What then can be done?

The first step in the process of attempting to reverse the tide of decentralization is to make a thorough survey of the structure of our cities. Fortunately, the data for this will be provided for every city in the United States Housing Census of 1940, which is now under way. The second step is to derive from these basic data certain techniques or methods of analysis which will help to locate the areas of worst housing. Third, a master plan should be developed for the whole metropolitan area of every city, according to which houses in the worst areas should be marked out for wrecking. Such areas might be the sites chosen for new housing authority subsidized projects and also for self-supporting private enterprise apartments for office workers. The dwelling units in areas slightly better, with an estimated economic life of 10 years or more, could be patched up and made more habitable for the period of time required to provide better housing for these groups. The areas between the worst and the new developing regions, or the medium-age, middle-class development, can be largely left alone. Their neighborhood morale will be fortified by the knowledge that there is a

program that will protect them from random racial movements. On the periphery of cities, new self-contained neighborhoods will be developed which avoid the extremes of limited land coverage on the one hand, and too diffuse development on the other, while providing for ample light and air. The dangers of a scattered development with a few houses to the block will be avoided by requiring that new developments have a minimum urban density. All of this program will be coordinated with traffic studies and with plans for new highways and parks that will treat the entire community as one problem.

Urban decentralization seems to present problems with insurmountable difficulties. If we could avoid tackling this problem or move away from it to a new frontier, that would be the easiest way out. However, our country is becoming a stable and settled society. The frontier in the West has disappeared. It is hardly likely that we can move cities to some new spot or that they will be entirely destroyed by bombing or great fires. Therefore, we face the Herculean task of cleaning out the Augean stables on a scale unparalleled in history.

The urgent problem of adequate national defense may well require the expenditure of billions of dollars and the labor of millions of persons. It is also of vital importance that we protect this nation from inner decay by reconstructing our cities and by laying down a sound pattern for future growth.

Why not undertake internal reconstruction as a corollary to national defense? We have abundant resources of sand, gravel, timber, clay, and iron that go to make up buildings. We have an idle man power of ten million persons available for defense against external attack and internal decay. The only obstacles in the way of a national construction boom are the present discrepancy between rents and construction costs and the tendency of some owners to hold out for prices of land which are based on the illusion that the dead forces of urban expansion will be miraculously resurrected. In a national emergency, however, it is to be hoped that the classes involved will face the realities of the situation, and adjust their differences so that we may proceed at full speed ahead with the work of rebuilding the nation.

Crop Insurance—An Experiment in Farm-Income Stabilization

By J. C. CLENDENIN*

"A Wheat Crop to Sell—EVERY YEAR!" This is the motto of the Federal Crop Insurance Corporation, which this year is insuring nearly 380,000 American wheat farmers against the hazard of crop failure. This $20,000,000 government venture was authorized by act of Congress two years ago, in February, 1938,[1] to learn by test whether it is practicable to insure farmers' growing crops against their age-old enemies of drought, flood, insects, fire, wind, and hail, on a sound commercial basis.

This new kind of insurance is now in its second experimental year. Wheat is the only crop insured, since it seemed better to try the idea thoroughly on one crop before tackling any more complex problem, but policies on wheat are sold to farmer-owners, tenants, sharecroppers, non-farming owners, or to any other person owning a share in the physical yield of the crop. The insurance covers against practically all hazards affecting the physical condition of the crop between seeding and threshing, except neglect and abuse. It is true *yield* insurance, written in terms of bushels per acre, with both premiums and loss indemnities stated in terms of bushels of wheat.

Although important economic gains are expected to result from crop insurance, the Government is not planning to lose much money on the project. It is, to be sure, paying the operating expenses during this experimental period, while the basic studies of loss data and insurance methods are being worked out, but *the insurance premiums paid by farmers are intended to pay all of the expected insured losses.* Furthermore, the premiums are actuarially calculated so that the high-risk farms where crop losses are frequently experienced pay a proportionately higher premium rate than that charged on "safe" farms where crop losses are rare. Thus over a reasonably long period of time *each farm* is expected to pay in premiums just about as much as it collects in loss indemnities. Nobody loses and nobody profits, except that the insured farmer can count on having cash income from his wheat crop every year, regardless of crop conditions.

Economic Stability Sought

The advantages which could flow from this stabilizing of farm yields are not hard to visualize. Nearly every year important areas and countless individuals are victimized by some sort of crop disaster, and the results—impoverished farmers, mortgage defaults, embarrassed banks, uncollectible bills, tax delinquencies, relief demands—are damaging both to the locality and the nation. It is easy to say that a good farmer should be prepared for bad crop years, that droughts are "all a part of the game," etc., but common sense disproves the implication. Few people find it possible to stand the loss of a year's income, or even a substantial part of it, without a considerable shock. Crop insurance enables a wheat farmer to insure against such disasters, obtaining financial security almost parallel to that afforded by the modern

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[1] Agricultural Adjustment Act of 1938, Title V, cited as Federal Crop Insurance Act.

broad fire-and-allied insurances carried by industrial plants.

Whether the Corporation will be able to sell crop insurance policies on a strictly voluntary basis to a big enough percentage of farmers, and especially to enough of the insecurely financed ones, to cushion the general economic effects of poor crop years is not yet demonstrated. Only 13% of the nation's wheat growers were insured for the 1939 crop year, but it appears that nearly 30% are on the books for 1940. If this rate of gain indexes the popularity of the idea, its final effect in stabilizing farming communities as well as individual farms may be very great. The insurance seems to be equally well received in low-premium areas and in insecure areas where premiums must be high, though it is hard to sell among poorly financed farmers to whom a premium payment means an immediate sacrifice. The latter problem is being solved to some extent at present by permitting farmers to assign their future AAA benefit payments to pay insurance premiums, but the evidence indicates that those who have the greatest need for crop insurance are generally the least likely to buy it. This may limit the plan's general economic and sociological effect; but it still seems like a good business proposition for the thousands who can and will use it, as well as a measure of substantial social advantage.

It is of course obvious that the great results expected from crop insurance cannot be achieved by insuring wheat alone. If the wheat experiment works, other crops must be covered also. Cotton and corn will probably be added next, and later such other crops as seem adapted to the insurance idea. There should be no haste about insuring additional crops. It appears that a minimum of five years' operation in wheat will not be too long a test period, but there is already congressional pressure on behalf of cotton. A bill ordering the Corporation to offer cotton insurance actually passed the Congress in April, 1940, but was vetoed by the President. The Bureau of Agricultural Economics recently presented a plan for cotton crop insurance[2] (it is largely an adaptation of the wheat plan now in use), and plans for corn and tobacco insurance are said to be in an advanced stage of preparation.

The Plan of Insurance

The plan of insurance being followed by the Corporation was developed in 1936 by a committee from the departments of Agriculture, Commerce, and the Treasury, after extensive research and conferences with farm groups, private insurers, and other interested parties.[3] Since the world did not have an example of a successful large-scale crop insurance program, it was necessary to make a new plan in its entirety. The private insurers, several of whom had experimented with ill-starred schemes of their own, contributed willingly of their experience, and the statistical data collected by the AAA provided a new and extensive actuarial background. The result is the present experimental wheat program, which appears to be essentially sound and non-controversial. Properly managed, it will not be an expensive subsidy, nor will it compete seriously with private insurers, regiment the farmer, or need connection with acreage restriction and similar AAA policies.[4]

The wheat insurance policy sold by

[2] "A Suggested Plan for Cotton-Crop Insurance," *House Document No. 277*, 76th Cong., 1st Sess.

[3] See "Report of the President's Committee on Crop Insurance," *House Document No. 150*, 75th Cong., 1st Sess.

[4] The terms of the present policy make it almost valueless to one who does not comply with acreage allotment limits.

the Corporation is very broad and very simple in its terms. It guarantees, for a stipulated premium payable in advance either in wheat or cash, to indemnify the insured farmer to the extent that his crop falls short of 75% (or 50%) of the normal or average yield experience of his farm. That is, if the farm has an average yield record of 20 bushels to the acre, the insurance policy will make up in wheat any shortage below 15 bushels (or below 10 bushels, if the farmer chooses the cheaper 50% policy). The farmer is obligated to use only fields suitable for wheat, to use a proper amount of good seed, to care for his crop in a normal manner, and to notify the Corporation before threshing if an insured loss appears likely.[5]

The policy does not in any way insure either the quality or the value of a farmer's wheat crop. It merely assures the farmer that he will own not less than 75% (or 50%) of a normal crop, *in bushels*, at the end of the season. In practice it is usually more convenient for the Corporation to pay its losses in cash, and it reserves the right to do this. The cash paid is a central market value of the wheat due under the policy, minus a transportation differential. Any insurance indemnity payable will call for wheat of a standard variety and grade, as specified in the policy, but the quantity due will be determined solely by the physical shortage of the farmer's crop. Such quality factors as protein content, weight per measured bushel, presence of foreign matter, etc., are disregarded to simplify adjustments.

Determination of Premium Rates

In theory the calculation of the premium for wheat insurance is a very simple matter. Each farm has its own individual per acre premium rate, which is based on the simple average of all losses the Corporation would have sustained over a period of years if crop insurance had been in force. Suppose, for example, that the 10-year average yield was 20 bushels to the acre, and the farmer wants a 75% contract (over 90% of the insureds buy the 75% contract). That means that the Corporation sustains no loss except when the farm yields less than 15 bushels per acre. Let us suppose further, therefore, that this occurred in three years out of the ten, once when the yield was 10 bushels, once when it was 12, and once when it was 13. The loss to the Corporation would have been 5 bushels, 3 bushels, and 2 bushels per acre respectively for the three years, or a total of 10 bushels per acre in the whole 10 years. Our theoretical annual premium (the Corporation calls it the farm loss-cost) would therefore be 1 bushel per acre for the 75% policy.

But this annual premium (loss-cost) calculation has another phase. The history of an individual farm may be considerably altered by a single non-recurring disaster, such as a fire or hailstorm. Consequently, the Corporation makes its premiums by averaging the individual farm loss-cost with the so-called *county loss-cost*, which is an average of the loss-cost figures of a number of representative farms scattered throughout the county. This process gives stability to the quoted rates, although it also occasions complaints from the owners of farms which have a lower than average individual loss-cost. These final per acre premium rates are then applied to the exact number of acres to be planted to wheat under the terms of the policy. If the insured prefers to pay cash, he will be charged the local value equivalent of his wheat premium.

[5] See "Questions and Answers on Wheat Crop Insurance," published in September, 1939 by the Corporation.

Premiums for 50% policies are computed in the same manner as those for 75% policies, except that the guaranteed yields and therefore the loss-costs are much smaller. As samples of premium rates charged during the 1939 crop year, the Corporation's first annual report cites the data presented in Table I.

TABLE I. REPRESENTATIVE COUNTIES SHOWING AVERAGE YIELDS AND PREMIUM RATES IN BUSHELS PER ACRE

County and State	10-year Average Yield for County (Bushels)	Average Premium	
		75% Coverage (Bushels)	50% Coverage (Bushels)
Sandusky, Ohio....	21.7	1.1	0.4
Golden Valley, N. Dak.....	8 .9	1.6	.8
Morton, Kans.....	7.7	2.3	1.5
Whitman, Wash....	26.4	.5	.2*
York, Pa.....	20.2	.6	.1*

* Policies subject to minimum premium rate.

As might well be expected, the Corporation has had great difficulty in obtaining reliable data on the yields per acre on each individual farm. Many farmers either did not have records at all, or they weren't sure of their figures on a per acre basis, or the records were fragmentary and unreliable. Also, it was necessary to have yield figures for each year, not just an average year, since the loss-cost rates depended on the losses of individual years. Not one farmer in a dozen could provide the needed authentic 10-year record of his yields. Where such data were available, they were of course used. Otherwise, they had to be estimated. The estimates were made by the county AAA committeemen, and based mainly on direct comparison of each individual farm with selected "key farms" for which reasonably adequate historical data were available.

The 1939 season yields and premiums were based on annual yield data for the years 1930 to 1935 inclusive, adjusted by a proportioning process to reflect 10-year (1926–35) experience. The 1940 yields and premiums were computed from annual yield data for the 9-year period 1930 to 1938 inclusive, extended back another four years by the proportioning process. In the Great Plains region where the fantastic droughts of the early 1930's distorted the figures, the proportioning process attempts to base the insurance on experience for the 20 years from 1919 to 1938. As each crop year adds another accurate annual yield figure to each farm's record, it will ultimately be possible to drop off the dubious estimates of the earlier years. This will improve greatly the fairness of both insured yields and premiums.

Operating Losses Sustained

It must be conceded that the 1939 yield and premium estimates were not very good. The key farm data were inadequate in many counties; inexperienced estimators were likely to rely on an estimated "county average" to too great an extent; and there was a substantial tendency to estimate yields high and losses low. The results are illustrated in Table II. Over 31% of the insured

TABLE II. 1939 CROP INSURANCE RESULTS IN CERTAIN STATES*

State	Number of Policies	Number of Loss Claims	Premiums Collected (Bushels)	Losses Paid (Bushels)
Illinois....	12,170	955	194,726	57,390
Indiana...	11,146	2,528	149,486	146,244
Kansas....	14,950	5,640	813,061	1,727,752
Minnesota.	10,280	2,440	175,132	145,616
Missouri..	15,783	2,751	213,608	167,091
Nebraska..	13,250	8,512	540,185	1,251,265
North Dakota..	28,050	7,877	2,048,428	1,328,815
Ohio.....	10,269	1,822	141,430	100,290
South Dakota..	10,772	7,425	738,941	1,506,281
U. S. Total	165,884	52,204	6,983,109	9,546,159

* From "A Statement on Crop Insurance" (February, 1940) by the F.C.I.C.

farmers collected indemnities, and the Corporation paid out 37% more in indemnities than it collected in premiums. Part of the loss is attributable to a widespread and very serious drought which afflicted Kansas, Nebraska, South Dakota, and other areas; but it is not so easy to explain the inconsistency of the results in other sections.

Even prior to the receipt of the 1939 loss claims the Corporation's statisticians were working to improve their yield and premium figures for the 1940 season. An improved technique for estimating farm yields was devised, a system for bringing the total yield and premium figures for each county into conformity with a carefully compiled "county check" estimate (based on representative farms and good historical data) was developed, and the crop years of 1936, 1937, and 1938 were brought into the calculations. The result is a widespread, though irregular, reduction in insured yields and increase in premium rates per acre for 1940, changes which would have brought the 1939 premiums and losses reasonably close to a balance had they been in effect in that year. Since the 1939 drought actually caused abnormal losses in the nation's most important wheat-growing section, it seems reasonable to assume that the 1940 rates are high enough and passably fair as between different counties and states.

Some Unsolved Problems

Although yield and premium problems in general now seem to be under control, there remains a knotty puzzle with respect to "special practices." In many parts of the country the wheat yield depends to a large extent on such practices as summer fallowing, crop rotation, fertilizing, irrigating, reseeding, and seeding improved (and expensive) varieties of wheat. There are also various degrees, types, and combinations of these practices. The farmers who resort to such methods expect and deserve adjustments in their insured yields or premium rates or both. However, the data which would throw light on *how much* the adjustment should be simply do not exist. Thus far the Corporation has made allowances for summer fallowing and irrigation only, and those only in certain designated counties, by compiling the yield and premium rates on such lands independently and separately. The rest of the problem is still being studied.

The 1940 season may disclose heavy losses from yet another loophole in the insurance plan. The farmers are permitted to delay their applications for insurance until a few days before they begin to seed their wheat. There is good reason for this. It is very difficult to sell the insurance and collect for it very long in advance of the time when it is needed. If conditions are good at seeding time, a fair amount of insurance will be sold; but if conditions are bad, everybody will insure. This happened on a very wide scale in the Kansas-Nebraska-South Dakota winter wheat area last fall. The land was excessively dry—so the farmers "rubbed their seed into the dust and took out insurance." It is possible that this hazard is not as dangerous to the Corporation as it sounds. We shall know when the 1940 losses are adjusted. If the losses are bad, the last date to apply for insurance will have to be established several weeks before seeding time, even if it means fewer policies sold.

Operating Expenses Not Excessive

It is already apparent that the Corporation's hope of attaining a low operating cost per policy depends on selling a large number of policies. Its wheat operations are carried on in 1,300 counties in 35 states, and statistics from every

wheat farm in the nation must be obtained and analyzed. Most of the operating expense is therefore fixed overhead, which will not increase with the number of policies. During the 1939 fiscal year the operating expenses amounted to $4,800,000, an amount equal to $28.90 per policy on the 165,884 policies serviced, or to about 98% as much as the value of indemnities paid. In the 1940 year the total expenses will be about $5,500,000, equal to about $14.00 per policy or to roughly ⅓ of the value of premiums collected. Since a large portion of these expense disbursements have paid for non-recurring equipment purchases, organizational work, research, etc., it is reasonable to expect substantial further reductions in the expense ratios next year, especially if the number of policies continues to grow. For the sake of comparison it might be noted that private fire and casualty insurers pay out almost as much in expenses as they pay in loss indemnities. Congressional committees were told three years ago that the Corporation should be able to get its operating costs down to 20% of the value of premiums collected. This would be a remarkable accomplishment, even for a virtual monopoly. A 25% ratio seems a more likely objective, and should certainly be regarded as a moderate and economically justifiable figure.

The Corporation's expenses are likely to be somewhat irregular from year to year because of the cost of storing varying amounts of wheat. Obviously, if premiums and losses are to be calculated in bushels of wheat, the Corporation must either store its collections against the day when losses must be paid, or sell its premium wheat and gamble on the cost of repurchases to meet loss claims. The storage alternative has been chosen. Records of past harvests indicate that there will probably be times when the Corporation will be forced to store as much as two full years' premiums, at considerable cost to itself; but the average amount in storage will probably fall between one year's premiums and half that amount.

Fraud against the Corporation Not Widespread

When the crop insurance plan was being developed, some of the experts were frankly apprehensive about "moral hazard." They expected many farmers to neglect their insured crops, to plant them on their poorest land, to make excessive claims for losses, and in general to take all possible unfair advantage of the insurance contract. Apparently these things have not happened, except in certain counties where the entire agricultural program is characterized by extreme laxity.

The Corporation reports that in general it has had little difficulty with moral hazard thus far. The county AAA committees which have the responsibility of passing on applications, inspecting insured crops, and adjusting claims, have apparently adhered to fairly uniform standards within their counties. They are too familiar with local conditions to be easily deceived, and local farmers hesitate to attempt frauds in the full view of their neighbors. As respects neglect of crops or choosing the poorest land on the farm, these devices are made unprofitable by limiting the insured yield to 75% or 50% of the average per acre yield record of the farm. The first 25% (50%) of loss is not indemnified, and the only way to avoid it is to try to raise a full crop. Besides, a few poor yields would speedily lower the delinquent farmer's insurable yield and raise his premium rate.

To test these implications of successful management the author has recently obtained statements of opinion from

farmers, private insurance agents, bankers, and teachers of agriculture in 125 wheat-raising communities in 16 states. The conclusions of these different vocational groups are almost identical. Asked about the prevalence of frauds against the Crop Insurance Corporation, 32% said none existed, 60% said there were a few cases, and 8% reported widespread fraud. When questioned about the FCIC's measures for guarding against neglect and fraud, 68% said the Corporation was careful, 20% said it was casual, and 12% said it was careless. With respect to its business methods, 10% said it was severe, 78% said fair, and 12% said lenient. This sounds like a very good record. Neither fraud nor controversy will impair the Corporation's work if it can maintain a reputation for fair, firm, careful, and impartial dealings. One suggestion, however, is made by several farmers and insurance agents. They feel that the Corporation should develop a substantial and competent field force to help maintain uniformity in procedure among different counties and different states. Laxity in one area is likely to stimulate envy and emulation in others, which would most certainly bring disaster.

The Opinions of the Farmers

What do the farmers think of crop insurance? The reactions are varied. One Illinois farmer replied that he couldn't write what he really thought, because he didn't have an asbestos envelope in which to mail his letter. A Montana farmer said that the whole scheme would "blow up" in five years because insurance guaranteeing only 75% of an average crop wouldn't protect the farmer from an operating loss in most years, and hence wasn't adequate for his needs. A South Dakota operator commented that "basing premiums on farm records without reference to who does the farming will never work, for there are tenant farmers in my county who never get 75% of a crop on any farm." There are dozens of other criticisms, some very sound and some seemingly based on the idea that insurance policies should always pay benefits to supplement their owners' incomes. One also gets the impression that a large number of insureds have been annoyed by limitations in the policy or misunderstandings regarding it. However, most of these have not definitely decided against continuing the insurance, and the 128% increase in number of policies in 1940 as compared with 1939 must indicate fairly general approval, even though some of the increase can be attributed to the drought conditions prevailing last fall.

In addition to criticisms previously mentioned, the following appeared frequently: (1) Rates are too high and insured yields are too low to make insurance seem attractive in risky areas. (2) The county average loss-cost is given too much weight in computing premiums. (3) "Other counties" get unfairly low rates and high insured yields. (4) The premium rate is too high when wheat is high in price. (5) The policy won't cover the loss if a portion of a bumper crop is destroyed, so hail (and other?) insurance is needed "whenever we get a good stand." (6) The policy doesn't cover late damage in shock or stack, if threshing is delayed. (7) The policy requires reseeding after a stand is winter-killed in many areas, but won't idemnify the cost. (8) Pre-threshing adjustments for total or near-total losses on the basis of estimated possible yield are often "stingy." (9) Adjusters insist on harvesting poor stands which aren't worth cutting. (10) When a drought before seeding time makes the effort futile, the policy requires seeding anyway, in order to be

eligible to claim a loss.

On the whole, it must be admitted that the criticisms do not point to fatal deficiencies in the insurance plan. In fact, several of the criticized features are not deficiencies at all, and most of the others are minor points or are being corrected. Nothing can be done to make a two-bushel premium for a six-bushel insured yield especially palatable to a Montana farmer, but when we consider that average claims in such an area are the equivalent of a total loss every third year it is obvious that he is not ill treated. Furthermore, even though the insured yield is not adequate to assure him prosperity, it will guard him from overwhelming loss in any year. That is its purpose.

Can Crop Insurance Succeed?

Within the past 40 years four noteworthy attempts to launch an all-risk crop insurance business have been made by private interests. All four ventures failed.[6] The apparent reasons for failure were: (1) attempts to insure the value of the crop or a recovery of costs of production, thus subjecting the insurer to price hazards; (2) inadequate actuarial data; (3) areas of operation too small to represent diversified weather conditions; (4) inadequate capital or unwillingness to persist after initial loss; and (5) permitting farmers to buy insurance after adverse weather conditions clearly portended losses. Of these five causes of loss, only the last is endangering the present program, and it can probably be overcome by setting the application deadline earlier in the season.

A review of the principal complaints against the Corporation and of its own published comments[7] on its problems leaves the impression that this is no slipshod political subsidy, but an attempt to run a sound insurance company. All evidence indicates that premium rates, policy terms, and loss payments are being brought into an equitable and self-sustaining relationship. The Corporation is earning a reputation for fairness. Its product is certainly worth while, and it does not compete sharply enough with private underwriters to engender any widespread hostility to itself. From a technical standpoint one must concede the Corporation a good chance of success.

However, two important and perennial non-technical hazards must be considered. The first is the possibility of future political mismanagement, which may some day make the Corporation into either a vehicle for political manipulation or a soft-job haven for rural ward-heelers or both. Other government agencies have been so abused. It might be a good idea to turn the Corporation over to the farmers to be operated as a mutual company completely independent of the Government, if a reasonable period of operation proves its feasibility. That would involve certain financial difficulties, but they might not be insurmountable.

The second hazard involves the willingness of farmers to participate in the program.[8] The premiums are unavoidably high in risky territory and many farmers hesitate to pay them even when

[6] See Hearings on Federal Crop Insurance, before Subcommittee of House Committee on Agriculture, 75th Cong., 1st Sess.

[7] Especially its 1st *Annual Report* (1939) and "A Statement on Crop Insurance" (Feb., 1940).

[8] The Corporation has had some cooperation from federal loan agencies in urging debtors to insure, but data collected by the author indicate that very few of the life insurance companies and only 40% of the banks in the wheat belt concern themselves with crop insurance. About 20% of the reporting banks require the insurance under certain circumstances, and a similar number are accustomed to advise it. A few institutions merely insure their own share-crop interests on farms which they own.

they recognize their fairness.[9] This is serious to an organization which should enroll 40% or more of the farms in areas in which it operates, in order to keep its operating expenses reasonable. Of course, the Corporation might cease to operate in areas in which it sells few policies, but its objective of stabilizing farm incomes can scarcely be reached that way. Real success means actually selling this insurance to at least 500,000 wheat producers each year, including at least a proportional number in risky territory, despite their hesitation over the premiums. The record does not yet prove that the Corporation can do this, even if the Government continues to subsidize wheat insurance by contributing to its operating expenses. Of course, it is possible that the complaints over high rates are merely protests which can be overcome by proper efforts to sell the insurance.

The wheat crop insurance venture may at this stage be called promising but unproven. Several more experimental years are needed to prove the salability of the insurance and its capacity to bear an expense-money loading. Possibly the project will require some expense-money assistance from the Government indefinitely; if so, we need to discover how much is necessary, and whether the social stability obtainable is worth its cost.

Until the results of the wheat experiment are more clearly shown it would seem wise to defer attempts to insure other crops.[10]

[9] The statistics of the Corporation indicate that the high rate areas have bought insurance as freely as other sections, thus far. However, almost ⅓ of the author's correspondents in Montana, North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, and Texas volunteered the comment that their rates were "too high." Their letters leave the impression that the insured in these areas find the premiums almost as burdensome as the hazards insured against, and are not at all sure to continue their participation.

[10] "... While the initial year's business has resulted in great benefit to the insured producers, it has resulted, nevertheless, in an impairment of $1,430,000 in the Corporation's capital, over and above the costs of administration and research which are borne by the Government. It seems evident, therefore, that we do not have as yet the essential 'backlog of experience' required for the establishment of a sound actuarial basis for crop insurance, i.e., for a crop insurance plan that would be fully self-supporting, with premium rates sufficient to cover costs of administration as well as of indemnities. Moreover, when such a plan is established, I think the producers of all major agricultural crops should share in its benefits. ..." (From the President's message of May 4, 1940, vetoing the cotton crop insurance measure.)

I. Shall Going Value Be Included in the Rate-Base?

By IRSTON R. BARNES*

The Nature of Going Value

DEFINITIONS of concepts about which controversy clusters are quite as likely to mislead the understanding as to guide it aright. No element of value has been more often denied, exaggerated, or disputed than that of going value. With this warning the following definition may be offered for the purpose of launching the discussion rather than for the purpose of pointing it to a predestined conclusion. Going value has commonly been regarded as that added increment of value by which an operating concern, with established business connections, operating routines and revenues, exceeds (or may exceed) the value of one with an equivalent physical plant but which has yet to begin its operations.[1] In an early rate case, the Supreme Court stated that going value was "the added value of the plant as a whole over the sum of the values of its component parts, which is attached to it because it is in active and successful operation and earning a return,"[2] and this definition has been used in subsequent decisions.

Going value is frequently confused with good will and with franchise values, and the two latter are confused with each other. The confusion of going value and franchise values involves a failure to exclude the elements of monopoly value associated with franchises, whether or not exclusive, from a value that is identified with efficiency in operation and success in earning a satisfactory profit. The confusion of good will and franchise value arises from an illogical attempt to associate an element of monopoly value with a type of value which arises only under conditions of free competition. The confusion of good will and going value is likely to arise from attempts to associate the latter with earning capacity.[3] In commercial appraisals, going value, either alone or in combination with good will, often bulks large in the total value of unregulated enterprises. But in the valuation of utilities and similar regulated businesses, good will must be dis-

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[1] In a leading New York case, going value was defined with an emphasis on the so-called "development costs," as "the amount equal to the deficiency of net earnings below a fair return on the actual investment due solely to the time and expenditures reasonably necessary and proper to the development of the business and property to its present stage, and not comprised in the valuation of the physical property." *Kings County Lighting Co. v. Willcox*, 210 N. Y. 479, 491 (1914).

[2] *Knoxville v. Knoxville Water Co.*, 212 U. S. 1, 9 (1901).

[3] This danger is clearly illustrated in the opinion of the Indiana Public Service Commission in *Re Indianapolis Water Co.*, P.U.R. 1923 D 449 (1923) at p. 494:

"A good property has an intangible value or going concern value over and above the value of component parts of the physical property. Numerous theories about going value and about the method of computing the amount of it are available in the text books, and the long line of court and Commission decisions on the subject. In this case, the cost of the physical property can be approximated, the cost of reproducing it on various bases is in evidence, and it is not difficult to arrive at a fairly correct sum to represent the physical or bare bones value. Any reasonable man with a knowledge of this property and the local conditions would unhesitatingly affirm that it had a value far in excess of the value of the pipe, buildings, grounds and machinery. Consider its earning power with low rates, the business it has attached, its fine public relations, its credit, the nature of the city and the certainty of large future growth, the way the property is planned and is being extended with the future needs of the city in view, its operating efficiency and standard of maintenance, its desirability as compared with similar properties in other cities and with other utilities of comparable size in this city. These things make up an element of value that is actual and not speculative. It would be considered by a buyer or seller of the property or by a buyer or seller of its securities."

tinguished and rejected; it is an element of value that is pertinent only for businesses operating under competitive conditions. And just as any monopoly element is ruled out in the determination of franchise values, so going value must neither duplicate the allowance for franchise values nor reflect any element of value arising from the utility's relative immunity from the vicissitudes of competition.

The Components of Going Value

Much of the confusion that has characterized the discussion of going value arises from a lack of agreement as to whether going value relates to elements of "value" or to elements of "cost."

If going value is concerned with "values," there is simple common sense in the observation by the Supreme Court: "That there is an element of value in an assembled and established plan, doing business and earning money, over one not thus advanced, is self-evident."[4] Certainly an established and successful plant would have a greater value to a prospective purchaser than either an unsuccessful enterprise or an untried and unproven undertaking. But this value would be a function of the earnings of the established enterprise; it would be commercial value, perhaps quite unrelated to any appraisal of the physical property of the business. And clearly, any value, whether it be termed "going value" or something equally euphonious, which is derived from the earnings of the enterprise, must be quite unacceptable in determining the fair base for regulating the charges of utility enterprises. In utility regulation, going value is not, and cannot be, "value."

Going value, like the other elements of "value" which constitute the base for prescribing utility charges, must relate to elements of "cost." Only to the extent that costs have been imposed on the utility corporation is it entitled to collect revenues from its patrons. Analysis of going value reveals that costs relating to establishment of the business may adhere to the physical property, the personnel, or the patronage of the utility; and in return for these expenditures, the enterprise has presumably attained facility in its operations and an output commensurate with its capacity. Thus during the period of early operations, there will be a measure of experimentation and adaptation before the most efficient operation of the physical plant is obtained; the "breaking in" of the physical plant may even be accompanied by some replacement and relocation of parts and other changes of significant proportions. The personnel of the business must be selected and hired, employees must be trained for their particular jobs, operating routines must be devised and adjusted, the orderly preparation of accounting and other business records must be assured, et cetra. The development of patronage requires the expenditure of both time and money: prospective users of the service must be canvassed, advertising and free demonstrations are needed to make known the methods of using the service and its advantages, the sale of necessary equipment to patrons must be stimulated through free installations and the extension of credit, and finally connections must be made with the customer's premises, and meters must be installed.

The attainment of capacity output is essential to the achievement of low costs. The source of inadequate income in the early period of operations is attributable largely to the necessity of building a plant of larger capacity than is required for immediate needs in order

[4] *Des Moines Gas Co. v. Des Moines*, 238 U. S. 153, 165 (1915).

that the prospective demand may be served economically. As business expands, the revenues of the company become more adequate, unit costs decline, and profits replace losses. The losses, or the absence of profits, during the period prior to attainment of normal output are inevitable in launching any enterprise that requires substantial investments in plant and equipment. A corporation that has successfully survived this initial period of low earnings is a more effective instrument of public service and is commercially more valuable than one which still faces the uncertainty of winning public patronage. The deficiencies in earnings during this initial period are sometimes regarded as the "cost" of developing the business, analogous to the cost of the physical plant, except that this "cost" is incurred after operations have begun.[5]

Measures of Going Value

The measurement of going value has been one of the unsolved problems of utility valuation. Of the methods proposed and utilized in its measurement, five merit description and analysis. For purposes of discussion these methods may be identified as: the development-cost, the comparative-plant, the reproduction-cost, the expert-testimony, and the capitalization-of-initial-risk methods.

1. The Development-Cost Method. Development cost may be calculated either by an historical cost method or by the so-called Wisconsin formula.

Development cost, if measured by historical cost, is determined from the accounting records of the utility. The nature of these costs has already been described; they are associated with breaking in the physical plant and training the personnel, and with the deficits incurred during development of the property. In amount, these costs have been said to average from 10 to 20%, exceeding 30% in a substantial proportion of cases, and in some instances equalling 50%, of the cost of physical property. The magnitude of such costs will be influenced by the amount and proportion of fixed costs, being relatively larger for railroads than for other utilities, and by the length of the development period; and of course, significant variations will result from differences in the nature of the territory served.

Numerous objections have been advanced to use of the historical cost method as a measure of going value for purposes of rate regulation. The historical development cost is not capable of definite determination where the records of the corporation are incomplete or inadequate. Some of the elements of cost, such as those of the administrative staff, may already have been included in the overhead expenses. In the absence of explicit standards of managerial efficiency, it is not possible to determine to what extent deficiencies in early revenues were attributable to unavoidable delays in the development of profitable patronage and to what extent these deficits reflect inefficient or incompetent management. As the magnitude of the costs depends upon the length of the development period, and since there are no objective criteria for determining its proper length, it may be expected that the less successful utility—the one launched without a sufficient public demand for the service, or the one whose costs are unwarrantedly exaggerated—will be given a

[5] Yet cost is not invariably accepted as a justification for an allowance for going value even by those commissions and courts that have consistently recognized this element of value. If the utility is not a success, no allowance for going value is made however inadequate its early earnings may have been. A street railway operating at a deficit or with a return of only 2% has no going value that regulatory authorities will recognize.

greater going value than the utility that is immediately successful, a result quite contrary to common sense and sound public policy.

The so-called Wisconsin method (long discredited and abandoned) was one widely known example of the development-cost principle. This method proceeded on a basis whereby the deficiencies in income below the fair return in any year were added to the rate-base for the following year. This formula may be expressed as follows:

If rate-base at the beginning of the year is....	B_1
Cost of extensions during the year.....	b
Operating expenses during the year (including depreciation).....	O
Fair return upon B_1 plus b/2.....	R
Gross earnings for the year.....	E

Then the rate-base for the following year B_2 consists of the sum $(B_1+b+O+R)$ minus E. The going value continues to accumulate until the earnings, E, equal or exceed the operating expenses, O, plus the fair return, R. (See Table I.)

Is the procedure developed by the early Wisconsin Railroad Commission a satisfactory method for the measurement of the going value for rate-making purposes? It has been noted that the formula results in an overcharge of consumers if interest is allowed on accruing depreciation unless there is also proper deduction for the previously accrued depreciation. The validity of this criticism was recognized by the Commission, and depreciation was thereafter included in costs only when the rate-base was present value rather than the cost new.[7]

Like the historical development cost, the Wisconsin formula results in an exaggerated estimate of going value when the early period of inadequate earnings is prolonged, thus providing a guarantee of earnings despite inefficiencies and extravagances in management. The reasonable application of the formula thus

[7] "There may also be a question as to whether such increment should constitute an addition to the cost new of the property, or to the value in its existing condition. If the cost new is the basis, it may be said in general, that the going value estimate should take into consideration a rate of return which should provide only for return on property, and not for depreciation, for, if the cost new is used, allowance is thereby made in the valuation for such amount as should have been set aside to cover depreciation. On the other hand, if the present value is used, the rate of return which is considered in arriving at the going value must be a rate which will cover interest and profits and also depreciation. In the present case it seems that the allowance for going value and for discount on bonds constitutes a considerable addition to the existing value, but not a large increase in the cost new." *Janesville v. Janesville Water Co.*, 7 Wis. R. C. R. 628 (1911).

TABLE I. EARNING VALUE COMPUTATION[6]

Year	Cost at Beginning of Year	Additions during Year	Depreciation 1%	Interest and Profit 7%	Total Foregoing	Net Earnings	Value at Close of Year
1898	$210,000	$8,034	$1,944	$14,981	$234,959	$12,794	$222,165
1899	222,165	2,705	1,997	15,646	242,513	20,326	222,187
1900	222,187	3,007	2,026	15,658	242,878	16,610	226,268
1901	226,268	937	2,046	15,872	245,123	19,264	225,859
1902	225,859	1,829	2,509	15,874	245,621	19,486	226,135
1903	226,135	3,862	2,088	15,965	248,050	18,297	229,753
1904	229,753	3,163	2,123	16,193	251,231	19,723	231,508
1905	231,508	2,622	2,152	16,297	252,579	23,390	229,189
1906	229,189	3,648	2,183	16,171	251,191	22,105	229,086
1907	229,086	5,163	1,227	16,217	252,693	20,929	231,764
1908	231,764	8,391	2,295	16,517	258,967	24,649	234,318
1909	234,318	3,773	2,356	16,534	256,981	24,504	232,477
1910	232,477	5,138	2,401	16,453	256,469	29,135	227,334

[6] This illustration with a slight variation, in procedure, is from the Wisconsin Railroad Commission's calculation in *Re Manitowoc Water Works Co.*, 7 Wis. R. C. R. 71, 103 (1911).

depends upon sound judgment in delimiting the development period and avoiding excessive allowances.

The development-cost method has not been approved by the Supreme Court. In the Galveston Electric Company case, Mr. Justice Brandeis ruled flatly against the inclusion of development cost in the base value for the purpose of determining whether a rate is confiscatory:

"The most important of these items is $520,000 for 'development cost.' The item is called by the master also 'going concern value or values of plant in successful operation.' He could not have meant by this to cover the cost of establishing the system as a physically going concern, for the cost of converting the inert railway plant into an operating system is covered in the agreed historical value by items aggregating $202,000. . . . The going value for which the master makes allowance is the cost of developing the operating railway system into a financially successful concern. The only evidence offered or relied upon to support his finding is a capitalization of the net balance of alleged past deficits in accordance with what was said to be the Wisconsin Rule. The experts calculated this sum in various ways. One estimate placed the development cost at $2,000,000; a more moderate estimate by the company's expert was $575,300; and the city's expert made a calculation by which he estimated this so-called cost at $212,452.

"If the rule were that a prescribed rate is to be held confiscatory in case net earnings are not sufficient to yield 8 per cent on the amount prudently invested in the business, there might be propriety in counting as part of the investment such amount, if any, as was necessarily expended at the start in overcoming initial difficulties incident to operation and in securing patronage. But no evidence of any such expenditure was introduced; and the claim of the company does not proceed upon that basis. What was presented by the witnesses are studies, on various theories, of what past deficiencies in net income would aggregate, if 4 per cent were allowed as a depreciation annuity and 8 per cent compound interest were charged annually on the value of the property used. These calculations covered on one basis, the period of 39 years since the original horse-car line was built; on another, the period of 15 years since the appellant purchased the property as a going concern. If net deficits so estimated were made a factor in the rate base, recognition of 8 per cent as a fair return on the continuing investment would imply substantially a guarantee by the community that the investor will net on his investment ultimately a return of 8 per cent yearly, with interest compounded on deferred payments; provided only that the traffic will in course of time bear a rate high enough to produce that amount.

"The fact that a utility may reach financial success only in time or not at all, is a reason for allowing a liberal return on the money invested in the enterprise; but it does not make past losses an element to be considered in deciding what the base value is and whether the rate is confiscatory. A company which has failed to secure from year to year sufficient earnings to keep the investment unimpaired and to pay a fair return, whether its failure was the result of imprudence in engaging in the enterprise, or of errors in management, or of omission to exact proper prices for its output, cannot erect out of past deficits a legal basis for holding confiscatory for the future, rates which would, on the basis of present reproduction value, otherwise be compensatory. *Knoxville* v. *Knoxville Water Co.*, 212 U. S. 1, 14.

"Nor is there evidence in the record to justify the master's finding that a business brought to successful operation 'should have a going concern value at least equal to one-third of its physical properties.' Past losses obviously do not tend to prove present values. The fact that a sometime losing business becomes profitable eventually through growth of the community or more efficient management, tends to prove merely that the adventure was not wholly misconceived. It is doubtless true, as the master indicated, that a prospective purchaser of the Galveston system would be willing to pay more for it with a record of annual losses overcome, than he would if the losses had continued. But would not the property be, at least, as valuable if the past had presented a record of continuous successes? And shall the base value be deemed less in law if there was no development cost, because success was instant and continuous? Or, if the success had

been so great that, besides paying an annual return at the rate of 8 per cent, a large surplus had been accumulated, could the city insist that the base value be reduced by the amount of the surplus?"[8]

Similarly, Mr. Justice McReynolds, in indicating what the Court regarded as the minimum fair value in the Southwestern Bell Telephone Company case, specifically excluded the cost of establishing the business.[9]

2. The Comparative-Plant Method. This method is a contribution of the engineers to the subject of utility valuation.[10] Going value is determined by an analysis of the relative net earnings of an existing plant as compared with the net earnings of a hypothetical "comparative plant." The "comparative plant" is assumed to be built and ready to begin operations on the date of valuation, and under non-competitive conditions to acquire as rapidly as possible a business equivalent to that of the existing plant. First, the probable income of the extant plant is predicted for the period of years that are assumed to elapse until the "comparative plant" shall secure earnings equal to those of the existing plant. Then the earnings of the hypothetical "comparative plant" are predicted for each year until the annual net earnings shall be equal to the projected net earnings of the existing plant. The excess in the annual net earnings of the existing plant for each year during this period is discounted to the present; and the sum of these present values is said to measure the value of the "created income," or going value, of the existing plant. It is described as the amount which a purchaser could afford to pay for the existing property with its established income, beyond the value of the bare physical property.

Two faults in the comparative-plant method have been fatal to its adoption by regulatory authorities. First, the method involves too many predictions and estimates resting on the unverifiable judgment of the valuation engineer: the probable future earnings of the extant plant, and the rate at which the comparative plant will increase its earnings; these judgments must rest in turn upon other estimates—the conditions of business, the rate of population growth, the trend of operating expenses, et cetera. Secondly, the amount of going value that will result from the comparative-plant method depends directly upon the present and prospective earnings of the existing plant—an indefensible relation when the purpose of the valuation is the establishment of reasonable rates for the existing plant.

3. The Reproduction-Cost Method. This method of measuring value may express the proper allowance as a specific sum per customer or other unit, or as a percentage.[11] For going value, as for other elements of reproduction cost, reliance is placed largely on estimates—estimates of the cost of training personnel, attaching the existing volume of business, and carrying the excess plant during the initial period. In the nature of reproduction cost, these estimates rest fundamentally upon the testimony of valuation engineers and other experts.

The reproduction-cost method has fared no better than other measures of

[8] 258 U. S. 388, 393–6 (1922).

[9] 262 U. S. 276, 288 (1932).

[10] Leonard Metcalf and John W. Alvord, "The Going Value of Water-Works," 73 *Am. Soc. C. E. Transactions* 326–91 (1911).

[11] As examples of the former may be mentioned $20 per customer for trucking, *Re Rates on Milk Transportation*, P.U.R. 1933 C 194 (Md., 1933); 2%, plus $5 per station, *Re Chesapeake & P. Tel. Co.*, P.U.R. 1916 C 925 (Md., 1916); $6 per station, *Re Albemarle Tel. Co.*, P.U.R. 1922 A 756 (Va., 1921). Percentage allowances are customarily made, the majority of the allowances falling between 5 and 10%.

going value in meeting the legal hurdles. In the St. Joseph Stock Yards case, the Supreme Court found the testimony as to the reproduction cost of going value of no probative force:

" 'Appellant's witnesses, who testified at length at both hearings, followed an elaborate method involving assumptions and speculations of the sort which fail to furnish a sound basis for computing a separate allowance for that element. . . . The witness differentiated his method from the 'past deficit' method. . . . He styled his method as 'the cost of reproduction method of evaluating the business.' It compared 'to the past deficit method in just exactly the same way that reproduction new of physical property compares to historical cost of physical property.' His calculations depended upon assumptions of theoretical future deficits. They involved elaborate guesswork, according to assumed valuations of physical plant, the length of time required for the complete recovery of the business, and the rate of return. At the first hearing he computed the going concern value at $666,666. At the second hearing, by a similar method he made various calculations dependent on assumed valuations of property, that is, $294,000 on a total valuation of $5,000,000; $358,000 on a valuation of approximately $3,500,000; and about $400,000, or approximately 22½ per cent. of the physical plant value on a valuation of $2,000,000. That is, as he said, 'Depending upon the final value as fixed by the Secretary, the going value will range in approximately a straight line variation between the limits of 22½ per cent. for a minimum value of $2,000,000, and 6 per cent. or $294,000 for a maximum value of $5,000,000.' The Secretary treated such speculations as 'in no real sense evidence.' We agree with that conclusion."[12]

4. The Expert-Testimony Method. The determination of going value on the basis of expert testimony has even less to recommend it than the methods already considered. The expert testimony may seek to show going value as value, that is, the sum which the attained facility in operation and the volume of patronage would be worth to a prospective purchaser—a quantum unacceptable for rate-making purposes—or it may seek to develop the historical or reproduction cost of creating the existing patronage and operating organization. Although commissions and lower courts have sometimes been willing to make findings of going value on the basis of such evidence, the Supreme Court, when the question was squarely presented to it, considered such testimony "too conjectural" to serve as a basis for testing whether prescribed rates were confiscatory.[13]

[12] *St. Joseph Stock Yards Co. v. U. S.*, 298 U. S. 38, 62–3 (1936).

[13] "The remaining question, then, is whether the Company has proved, with requisite persuasiveness, a greater amount for going value than that which may be treated as substantially allowed. An examination of the evidence offered by the Company upon this subject shows it to be of a highly speculative and uncertain character. There were two witnesses and the grounds of their estimates put their results in a strong light. The Company's valuation expert, Mr. Luick, gave three methods which he had used as guides in the forming of his judgment as to going value. The first method was 'gross revenue,' which the witness used on the basis of his experience 'that a purchaser will ordinarily and reasonably pay for a property with established earnings, and on a stabilized operating basis approximately one year's gross revenue over and above the value of physical property.' This basis the witness said would indicate a going value of $15,801,208.21 'based on revenues for the year ended December 31, 1929.' His second method was to take a percentage of the physical property, the witness stating that in his opinion a purchaser 'would pay approximately 15 per cent. above the cost of reproduction because of the going value of a property so developed.' This percentage produced a total of $10,638,005. The third method he called the 'consumer method' which was based on a cost of not less than $25 per meter and gave an aggregate of $8,886,700. The witness said that he had also given consideration to the fact that the Company had 'an exceptionally good history of growth, an established business, with satisfactory record of earnings and excellent future prospects.' The witness alluded to the growth of Los Angeles and adjoining communities, and considering all these factors estimated the going value as of January 1, 1930, at $10,000,000.

"The other witness, Mr. Miller, took Mr. Luick's construction program, in which the latter had figured the cost of reproduction, and had assumed that there would be turned over to the operating department

(*Footnote 13 continued on page 293*)

5. Capitalization of the Initial Risk. It has been proposed that going value be measured by a capitalization of the initial risk, as indicated by the difference in the rate of return required to induce investors to purchase the securities of a new, rather than of an established, enterprise.[14] This method may be illustrated by assuming two similar plants each costing $1,000,000; if the established plant is able to sell its stock on a 6% basis, it may be that the new plant will find it impossible to sell its securities on less than a 7 or 7½% basis. If 7½% be assumed, the difference in the initial risk as appraised by investors is 1½%, or an annual return of $15,000, which, capitalized at 7½%, yields a going value of $200,000.

This method has not been adopted by regulatory authorities, and indeed it would appear to be quite unsuited to rate regulation. The differences in the yields on the securities of the two corporations, assuming the companies are otherwise comparable, may reflect a number of factors other than the fact that one is just beginning operations, whereas the other is well established. Furthermore, this measure makes going value directly dependent upon earnings.

From this too brief survey of the various methods for measuring going value, it appears that each of the methods frequently urged upon the consideration of commissions and courts is beset by critical weaknesses. No method of measuring going value has been accepted as valid by the judiciary, and consequently public service commissions have felt free to reject the results derived by each method. If going value were to have a place in rate regulation, a first necessity would be to devise a measure of going value which could be recognized as valid by regulatory authorities.

The second installment of this article will complete the discussion of the inclusion of going value in the rate-base by (1) analyzing the economic and legal status of this allowance as revealed in rate cases and (2) by examining the attitude of the United States Supreme Court toward the role of going-concern value in rate regulation.

(*Footnote 13 continued from page 292*)

'one-twentieth of the service mains during each quarter of the second to sixth years inclusive.' Estimating year by year the cost of securing the business during the construction period, the witness took the difference between 8 per cent. interest on the property used and useful during the year and the net earnings estimated to have been received, and the total of these differences with interest, during the period assumed to be required, was taken to represent the cost of securing the present business of the Company. This was thus calculated to amount, from the second through the seventh year inclusive, to $8,721,878. To this sum the witness added as to estimated cost 'of organizing property and personnel,' $506,789, thus reaching the total of $9,228,667 which the Company claims as going value. It is unnecessary to analyze the testimony of these witnesses, as it is obviously too conjectural to justify us in treating the failure to include their estimates as a sufficient basis for a finding of confiscation." *Los Angeles G. & E. Corp. v. Com.*, 289 U. S. 287, 317–9 (1933).

[14] Nash, *The Economics of Public Utilities* (New York: McGraw-Hill Book Co., 1931), pp. 171–2.

European Insurance Companies and Real Estate: With Particular Reference to Housing

By CORLISS L. PARRY*

THE following article deals with a topic that has been largely neglected in American writing, but merits attention because insurance companies[1] are important elements in the financial structure of virtually all European nations, and real estate mortgages and directly owned properties are among their principal investments. Its preparation was begun prior to the outbreak of war, but an effort has been made to include verifiable developments subsequent to that tragedy.[2] Obviously, the war and its consequences may bring drastic changes in the investment policies here described, if not in the institution of insurance itself. At this juncture, the future is uncertain. But in the present unhappy situation, it may not be amiss to recall that, in previous difficult times, the European insurance industry has shown itself capable of remarkable resilience and adaptability to new conditions.

Methods of Financing Real Estate

At the outset it is worth setting down that foreign insurance companies provide funds for the financing of real estate in no very different ways from those existing in America. First and foremost, of course, is the mortgage loan on an individual property or group of properties. As in the United States, this traditionally has been a first lien; the laws of many foreign countries forbid the granting of junior loans by life insurance companies. Loans are customarily made for ½ to ⅔ of appraised value; in some instances, especially where the loan carries a guaranty from a municipality or other agency of government, higher percentages of value and even junior loans have been granted.[3]

Second, and least important in European insurance company practice, is the purchase of securities issued by governmental and other bodies engaged in real estate or housing activity. In this class are the debentures of mortgage banks, securities issued by public housing authorities, obligations issued after the first World War for rebuilding the devastated areas, etc. In this type of real estate financing, obviously, the insurance company is in a more or less passive position so far as supervision of the purposes, construction, or earning possibilities of the property are concerned.

A third method by which European insurance companies participate in real estate finance is the outright purchase or construction, and subsequent direct operation, of housing and other realty. Direct investment in urban real estate has been an important outlet for funds of French insurance companies for upwards of 110 years. Among Italian and Austrian companies, owned real estate is

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[1] The present treatment refers primarily to *life* insurance companies, but a sharp distinction between them and other insurance companies is not always practicable. Unlike the prevailing American practice, many European companies transact all kinds of insurance, with the respective branches merely departmentalized.

[2] For effects of the war on real estate construction and finance in Great Britain, see "War and Housing," 50 *The Economic Journal* 42–50 (March, 1940); also "The Effect of the War upon British Building Societies," *Federal Home Loan Bank Review*, May, 1940, p. 259 and June, 1940, p. 304.

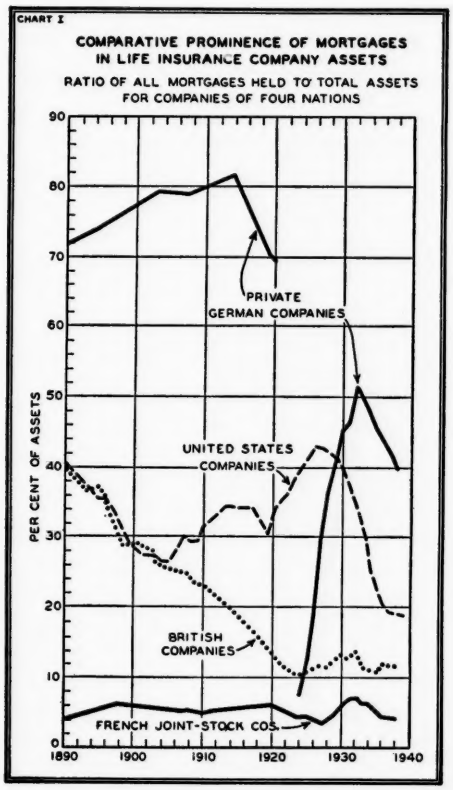
[3] Cf. Ernest M. Fisher and Richard U. Ratcliff, *European Housing Policy and Practice* (Washington: Government Printing Office, 1936), passim.

likewise an important asset, as it is too for Swedish insurance organizations. These situations will be described in more detail later, as will the "flat" and other landed property owned by the largest British insurance company. Indirect ownership by means of stock in housing companies has enjoyed some modest vogue among Swedish insurance organizations, but there as elsewhere direct ownership is the more usual form.

Lending on Mortgage

Aggregate mortgage holdings of insurance companies in most European countries have expanded over the years, but not consistently. During the first World War, growth of the mortgage portfolio virtually ceased in the major countries. Afterwards, expansion was resumed, but often at a lesser rate than the growth of total assets. It thus results that, *as a percentage of total assets*, mortgage loans are decidedly less prominent today in the portfolios of British and German life insurance companies, among others, than was true in 1914. In France, the percentage has changed little. These and other facts are revealed by Chart I, which traces the course of mortgage holdings for a half-century among three important European life insurance company groups and (for comparison) United States legal-reserve life insurance companies.[4]

In Germany, prior to the first World War, private life insurance companies had poured a steadily growing volume of funds into mortgages on choice properties in Berlin and other large cities. For various reasons, partly legal, mortgages constituted the overwhelming share of their assets—above 80% for the private German life insurance industry as a whole. The war seriously curtailed, and the post-war inflation virtually stopped, this growth. Partly because of the shock of inflation, and for other reasons, the German life insurance industry participated only to a minor degree in the low-rent housing boom of the 1920's.[5] There followed, upon reëstablishment of the



[4] To prepare this chart, and Chart II on directly owned real estate, it has been necessary to draw statistics from many sources, and in some instances to reconcile them in the interests of year-to-year and nation-to-nation comparability. As a general proposition, long-time *comparable* statistical series are less easily obtainable for many European countries' insurance companies than for the United States, where state insurance departments and insurance company associations long have compiled and made public excellent data.

[5] Julius Fleischmann, "Financing Low-Rent Housing in Germany," 12 *Journal of Land & Public Utility Economics* 121 (May, 1936).

companies after inflation, some brief experiments with other types of investment. But by the late 1920's, the German companies were again firmly committed to a policy of heavy investment in mortgages, as Chart I reveals.[6]

But the former percentage importance of that investment class was never regained. With the rise of the Hitler regime, government obligations took a place of increasing prominence in the investment scheme of the private German insurance industry. So too did loans to big industries. Between 1932 and 1938, security holdings (government, municipal, mortgage bank, etc.) of the private German life insurance industry nearly quadrupled, while mortgage holdings rose by barely ⅓ over the same period. While securities were rising in importance from 12% to 24% of total assets, mortgage holdings were declining to less than 40% of assets, compared with more than 50% of assets in pre-Nazi days and about 80% characteristically before 1914. Latest advices indicate a still further curtailment of the flow of funds into mortgages, by order of the German Minister of Finance.[7]

Among French life insurance companies, by contrast with the German, mortgage loans never have occupied a place of great prominence in the investment portfolio. That has been particularly true for the joint-stock companies, which, unlike the situation in the United States, comprise the overwhelming share of the French life insurance business. As Chart I shows, a remarkably uniform share of these companies' assets has been invested in mortgages throughout the half-century shown—i.e., close to 5%. The mutual offices have about 10% of assets in mortgages, and their percentage has fluctuated more widely than that of the joint-stock companies. Further evidence of the comparative smallness of the mortgage business of the French life insurance industry is found in the fact that it totals, in aggregate, barely ⅛ of the mortgage portfolio of the famed Crédit Foncier.[8]

French life insurance companies make loans up to 50% of the estimated value of the property, and these are almost wholly urban. Following the first World War, some experiments were conducted with loans made to building societies, in compliance with the government's efforts to ameliorate the housing shortage. Loans up to the regular percentage of value were granted by the companies' life insurance departments, with extra percentages granted through their fire or accident branches. But these loans did not turn out well, and the companies have since adhered to a more direct type of lending.[9]

In Great Britain, mortgage loans long have been regarded with favor by life insurance companies. Accordingly, one must seek for special reasons for the long-term drop in their relative prominence, revealed by Chart I. Some authors have sought to explain the decline in terms of competition from the building societies, or the diversion of funds into government obligations incident to war costs. But the changing economic structure of that nation undoubtedly also has been a factor; the growth of large-scale enterprise means that, in many instances, properties are now financed through debentures that formerly might have been

[6] In the inflation, mortgages proved to be a generally better investment for German insurance companies than did the obligations of the Reich itself, because of the higher percentage at which the former were revalorized in post-inflation days. But all investments suffered severely in that debacle.

[7] *The Review*, London, April 5, 1940, p. 263.

[8] *Compte rendu présenté au nom du Conseil d'Administration du Crédit Foncier de France* (Paris, 1939), p. 9.

[9] Pierre Hodra, "French Life Company Investment Policies," *Best's Life News*, November, 1939, p. 470.

financed by direct mortgage loans.[10]

But for the past 15 years the growth of the British companies' mortgage holdings at least has kept pace with the growth in total assets, so that the ratio has held fairly steady at 10% to 13% of assets. Those percentages compare with about 20% of assets represented by mortgages at the end of 1914, and 40% in 1890 (compare Chart I).

Multiple-dwelling properties in the larger towns are prime favorites for insurance company mortgage loans, and in recent years much attention has been given also to loans on small homes through the so-called house purchase plans. These latter involve a combination of mortgage loan (up to 80% of appraised value, often) and endowment insurance, with the latter designed to repay the former at the end of the endowment period or upon earlier death. Important as are all these mortgages in the real estate economy of the United Kingdom, they nevertheless are not so important a factor as are the loans of the building societies. These institutions have had a phenomenal growth in Great Britain,[11] so much so that their mortgage assets in 1938 were nearly 5 times as great as in 1925. Since 1929 alone, their total assets have more than doubled; this compares with an asset growth of less than 50% by the British life insurance industry, over the same decade. At present, insurance companies' mortgages total between ¼ and ⅓ the mortgage assets of the building societies.

It is now clear that, among the three major European nations, there is no such thing as a "norm" as regards the percentage of assets invested in mortgages. It is all the more noteworthy, therefore, that the figures for United States life insurance companies shown on Chart I tend to fall in between the extremes of mortgage investment policy of the German and French life insurance companies. Sensitivity to the real estate cycle has been one characteristic of the American companies' curve, but if one mentally "irons out" such ups and downs, he finds that the United States life insurance industry as a whole has had over the half-century not far from ⅓ of its assets invested in mortgage loans.

Among European insurance company groups not included in Chart I, Swedish companies show about ⅓ of assets in mortgages. Prior to the outbreak of war, the Dutch companies likewise had ⅓ in mortgage loans, whereas the Norwegian companies had placed 40% of their assets in that medium. Among Swiss companies, about ½ of assets are mortgages.

Debentures

It is virtually impossible to determine with statistical accuracy what portion of European insurance companies' funds has been invested indirectly in real estate, by acquisition of bonds. Municipal securities issued for housing purposes often are not clearly marked as such; in other instances, the security holdings of the insurance companies are not reported in sufficient detail to permit identification of individual issues. Under the circumstances, one must fall back on partial evidence. In Great Britain, insurance companies are reported as holding modest amounts of the securities issued by local authorities, and in France obligations of the Crédit Foncier and of other mortgage banks appear in fair vol-

[10] For further discussion of this point, see F. W. Paish and G. L. Schwartz, *Insurance Funds and Their Investment* (London: P. S. King and Son, 1934), pp. 70–1. Also see "Insurance Investment Policy," *The* (London) *Economist*, July 16, 1938, pp. 126–7.

[11] *The* (London) *Economist*, Building Societies Supplement, July 1, 1939, pp. 3 and 10. Cf. also Joseph L. Cohen, *Building Society Finance* (London: Reed and Co., 1933).

ume in the balance sheets of French life insurance companies. In Sweden, approximately 14% of life insurance company assets has been placed in the obligations of mortgage banks or related institutions engaged in real estate lending.

In Germany, the Reich authorities several years ago expressed dissatisfaction[12] with the direct mortgage lending operations of the insurance companies, alleging that the larger and more stable urban centers had been favored to the exclusion of small towns and rural regions. This the companies vigorously denied. In this connection, it was laid down as a general proposition (it is claimed) that the duty of the companies was to invest their funds not necessarily in those outlets which afforded the highest satisfaction for policyholders, but in undertakings that best served the needs of the state and community.[13] As a part of this undertaking, mortgage banks were to be encouraged to expand their active lending, and the insurance companies to divert their funds from new direct mortgage loans into bonds of the mortgage banks—assuming a more or less passive rôle. To what degree this proposal had the active support of the supervisory authorities is not entirely clear; at any rate bonds (*Pfandbriefe*) of the mortgage banks constituted but 4% of the assets of the private German life insurance industry at the end of 1935.

Outright Ownership: Bird's-Eye View

So far as European insurance corporations are concerned, few vestiges remain of the mortmain restrictions which severely limited corporate holding of real estate in feudal times, and the philosophy of which was carried over into modern statutory law.[14] Ownership of real estate needed for the conduct of the business is universally permitted. So, too, is real estate acquired by foreclosure, though in the latter case the statutes sometimes specify that such properties must be disposed of within a definite period of years.

As to real estate acquired for investment alone, the rules naturally vary from nation to nation. Where restraint upon such ownership is found, it may take the form either of (1) an outright prohibition, encountered in the charters of some (but by no means all) English insurance companies; (2) a legal requirement that consent of the supervisory authorities must first be obtained to the purchase, as is true in Germany;[15] (3) provision that, so far as statutory reserves are concerned, only ⅔ of the value of such real estate investment shall be sanctioned, with the remaining ⅓ to be included as part of the insurance company's surplus funds—the situation in Sweden; (4) legal requirement that not over a certain percentage of assets or reserves may be so invested—10% in the case of Hungarian insurance companies;[16] or (5) rules so broad as virtually to sanction almost complete freedom within the judgment of the insurance company management. Thus, French insurance companies are permitted to invest up to 40% of invested assets in realty,[17] and in Italy the only restraint placed upon direct ownership of real es-

[12] *Eastern Underwriter*, August 24, 1934, p. 7.

[13] *The Review*, London, April 5, 1940, p. 263.

[14] Cf. A. J. McAndless, *Report of Discussions and Speeches*, Joint Meeting of Actuarial Society of America and American Institute of Actuaries, October, 1938, p. 75.

[15] A. Sieveking, *The German Law on Private Insurance* (London: Stevens and Sons, Ltd., 1927), pp. 20, 21 and 25. Cf. also F. Hausner, *Digest of Insurance Legislation for the Protection of Policyholders in Continental Europe* (London: The Policyholder Journal Company, Ltd., 1939), pp. 105 and 112.

[16] Hausner, *op. cit.*, p. 163.

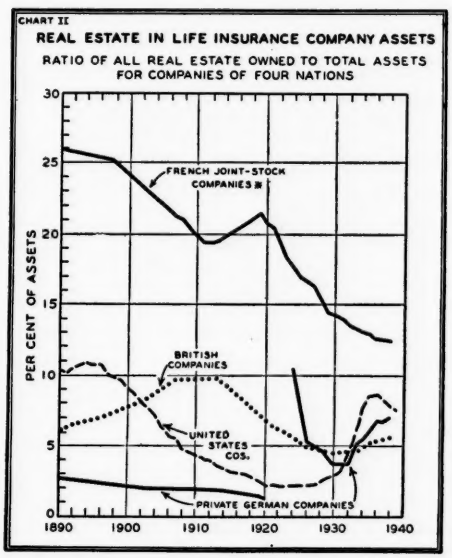
[17] Ministère du Travail, *Décret portant règlement d'Administration publique pour la constitution des Sociétés d'Assurance*, art. 153, ¶2. (Extrait du *Journa Officiel de la République Française*, December 31, 1938 No. 358, p. 15.)

tate by insurance companies is that the properties must be located in that nation or in one of its colonies, and be free of mortgage.[18]

Chart II shows the percentage prominence of real estate in the total assets of life insurance companies of three important European nations. For comparison, figures of the United States legal-reserve life insurance companies have been included. Within each company-group, the ratios have been derived from the combined real estate account—i.e., necessarily including every kind of real estate owned, for whatever reason acquired. For present purposes, a more satisfactory set of data would have pertained to investment properties alone, but these are not available except for the individual companies to be discussed later.

However, some generalization is possible with respect to the nature of the real estate for which ratios are shown on Chart II. For the French life insurance companies, which show the heaviest investment in that item, the real estate consists primarily of apartment and business properties purchased or built for investment, located in the middle-sized or larger cities of France and its colonies. Home and head office properties figure modestly, and rural real estate and foreclosed properties hardly at all in the holdings of the French insurance companies. For the British life insurance companies, home and head offices in the United Kingdom and elsewhere in the world are the largest single item in the real estate account; investments by one big company in "flats," landed estates, and business properties also figure prominently, with some foreclosed properties in addition. For the German insurance companies, the real estate item is made up of office and other properties, and (in times of economic depression) foreclosed real estate, chiefly urban.

Among all the national insurance groups shown on Chart II, the longest successful record with real estate as an investment may rightfully be claimed by the French insurance companies. Since 1827, at least, they have had important direct investments in that field.[19] The aggregate amount of their realty investment has been growing, but its percentage importance in total assets nevertheless has been falling for a half-century, as Chart II reveals.



* But see text.

But the decline of this ratio is more apparent than real—for the past 25 years at any rate. It results in important degree from the conservative accounting practices followed by these companies. When computing balance sheet values for their real estate, many of the French insurance companies include little if

[18] *Annuario delle Assicurazioni* (Rome: L'Assicurazione, 1939), passim.

[19] *Proceedings of the Sixth International Congress of Actuaries* (Vienna, 1909), Vol. I, p. 320.

any of the enhanced paper values for such properties that resulted from the depreciation in the franc. In other words, balance sheet values are generally much below present market values. By contrast, bonds and similar assets generally are figured close to actual market values. A test check reveals that, in 1939, market values of the leading French insurance companies' real estate were 60% higher than their balance sheet values, but that market values of their bonds were but 10% above reported values. If one makes adjustment for these factors, and computes the ratio of real estate to total assets based upon 1939 values, it is found that real estate now accounts for about 18% of the assets of French joint-stock life insurance companies—instead of the 12% ratio based on balance sheet values shown on Chart II. This adjusted ratio of 18%, then, is not far below the 1912 ratio of about 19%. Incidentally, these increments in market value of real estate stood some of the French companies in good stead, as an offsetting factor to their heavy losses in Russian Government bonds as a result of the Communist revolution.

For British life insurance companies, real estate as a ratio of total assets rose steadily until about 1910, when it constituted 10% of assets. For 20 years thereafter, the ratio fell, going below 5% in 1930. But the past decade has shown a rise, partly as a result of direct investments in realty by one large company, to be discussed later.

In Germany, there are individual life insurance companies which have 15% or even higher ratios of assets represented by land and buildings.[20] But for the German life insurance industry as a whole, real estate has never constituted a very important share of assets—barely 2% to 3% before the inflation, and not much more than 10% even in 1924, when many of the companies' fixed-income investments had been either wiped out or drastically hurt in value. At present, about 7% of assets is real estate of every kind.

For the United States companies, included on Chart II for background, properties needed for the conduct of the business form the basic part of the real estate account. In the 1890's and early 1900's, and again in the 1930's, there was an increment of foreclosed city and farm real estate. Despite the severity of the economic depression of the 1930's, the ratio of real estate to total assets of these companies did not climb as high as it had in the 1890's, as Chart II shows. On that earlier occasion, the foreclosed holdings were disposed of to new or former owners fairly promptly upon the return of more prosperous business conditions—a process that is again at work. In addition, the U. S. ratios in recent years include the large and important housing properties erected by the Metropolitan Life Insurance Company[21] of New York and the Prudential Insurance Company of Newark. At the time of writing, these two mutual companies were the only ones that own and operate such housing. Their investment

[20] Carl Neumann, *Jahrbuch der privaten und öffentlich-rechtlichen Versicherung im Deutschen Reich* (Berlin: Neumanns Zeitschrift für Versicherungswesen, 1938), p. 892.

[21] Further treatment of these American projects, which have received wide attention and acclaim from insurance supervisory and housing authorities, is outside the scope of this article. For a description of Parkchester City, the Metropolitan Life's newest development and unequalled in size by any private housing development anywhere, see *The Architectural Forum*, December, 1939. Mr. F. H. Ecker, chairman of the board of directors of that company, was the moving force in the construction of that city within a city. It far surpasses the company's earlier Long Island housing development—the pioneer American large-scale housing project operated by an insurance company.

in this respect—though obviously highly significant in its own right as modern large-scale housing—does not bulk very large in the total real estate account of the United States life insurance business.

Among countries not included on the chart, important groups of insurance companies of Italy and of Austria have from 15% to 30% of assets in real estate.[22] Swedish stock and mutual life insurance companies in 1937 had 3.7% of all assets in directly owned realty, and another 3% owned indirectly.[23] For the Swedish companies, both directly and indirectly owned real estate has expanded fairly rapidly in recent years, partly because of the companies' desire for improved earnings but also for widened outlets for their funds. In Denmark, the largest company (Hafnia) has a substantial investment in real estate, divided about ⅓ home office property, ⅓ housing, and another ⅓ in mixed commercial and other realty. However, these in the aggregate comprise but 2% of that company's total assets.

Outright Ownership: Experience of Some Individual Companies

Because the French, among European insurance companies, have had the longest and most successful experience with housing and other owned realty, it is helpful to examine their showing in greater detail. The three largest French life insurance companies—L'Union, La Nationale, and Compagnie d'Assurances Générales—account for about 40% of the real estate investment of the French life insurance industry. Detailed figures are available on the kind of properties held by the last named company, and these have been summarized on Chart III.

In aggregate, this company owns 109 properties, carried at a balance sheet value of 206,000,000 francs, but valued on a market basis just prior to the present war at 341,000,000 francs. These properties account for about 10% of the assets of this company; approximately 50% of its assets were in liquid Government or Government-guaranteed obligations,

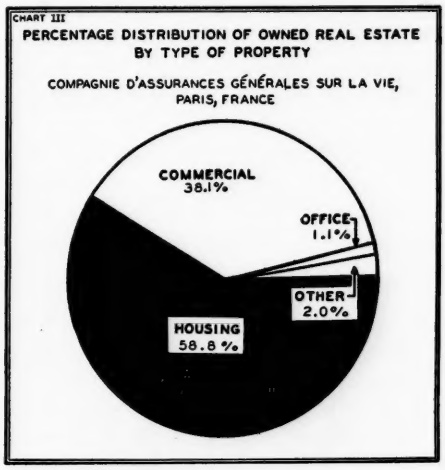


CHART III
PERCENTAGE DISTRIBUTION OF OWNED REAL ESTATE BY TYPE OF PROPERTY
COMPAGNIE D'ASSURANCES GÉNÉRALES SUR LA VIE, PARIS, FRANCE
COMMERCIAL 38.1%
OFFICE 1.1%
OTHER 2.0%
HOUSING 58.8%

while policy loans had absorbed only 4% of its assets. Thus the problem of the relative non-liquidity of real estate did not trouble it greatly.

As the chart reveals, about 59% of its real estate investment was housing. Characteristic of the practicality of the French people, these housing properties had been acquired or built with a view primarily to their investment qualities, and only secondarily with a view to the economic levels of the population they might serve. As a matter of fact, the company's housing is of very unequal size and nature; some consist of simple studios or small lodgings, offered at low

[22] Rudolf E. Blumenthal, *Wohnungsbau und Lebensversicherung* (Berlin: Deutscher Verein für Versicherungs-Wissenschaft, 1932), pp. 137–9.

[23] *Enskilda försäkringsanstalter år 1937 av försäkringsinspektionen* (Stockholm: Sveriges Officiella Statistik, 1939), pp. 30*–5*.

rents. Others, which for this company are in the majority, are intended for an upper middle-class or even wealthy clientele, and are located in the more expensive quarters of Paris.

Some private homes are included, but the housing investment consists primarily of large apartment houses. Of the 84 properties or groups of properties owned by the company in Paris, 72 were bought or built before 1914. Many of these would not be adjudged modern by American standards. But of the newer properties, virtually all contain the latest appointments, including electrical refrigeration, garages, etc. The fact that most of the properties are located in the same city as the company's home office makes it feasible to service them from that location. Prospective tenants are invited to call at its real estate department there, and an attractive handbook is issued which describes briefly the larger apartment properties and some of the near-by scenic and historic sights that may make them attractive to tenants.

The remainder of the real estate investment of this old and highly successful French insurance company consists primarily of large commercial buildings, comprising 38% of the total investment. About 1% is in home office, and there are insignificant holdings of farms, land for sale in allotments, and vacant ground.

Giving attention, next, to the combined real estate holdings of the three French companies already mentioned, it appears that in aggregate they own 257 properties, carried at a balance sheet value of 757,000,000 francs—or an average of about 3,000,000 francs per property. The largest single real estate investment is 35,000,000 francs, by La Nationale, in an apartment and commercial property at Neuilly-sur-Seine. Translated into dollars at the current rate for francs, obviously even this latter sum would not represent a very large investment by American standards. But differences between the two nations in costs make such comparisons invalid. Perhaps a better indicator is that this particular investment of 35,000,000 francs is six times the size of that company's investment in its home office, and accounts for 1½% of its total assets. For an American life insurance company with (say) $2,000,000,000 of assets, a corresponding percentage of assets placed in one project obviously would denote an investment of $30,000,000.

Reference has already been made to the preponderance of Parisian real estate among the holdings of Compagnie Générales. That is a situation characteristic of French life insurance companies as a whole, and is typified by the figures for the three largest companies shown on Chart IV.

To anyone acquainted with the prominence of Paris in the economic life of France, and the stability of that great city, it is not surprising that the managements of these three companies have chosen it for the site of over 60% of their realty investment. Actually, the percentage is even higher when computed on the basis of number of properties—nearly 70%. But the great strength of realty in that metropolis has not been the sole desideratum. Besides accessibility to home office, French law has encouraged the companies to locate their realty in the more populous centers by providing that, outside the Department of the Seine, investment realty may not be acquired in communes of less than 50,000 inhabitants without consent of the supervisory authorities.[24]

Other French cities account for 13%, and the colonies and protectorates for

[24] Extrait du *Journal Officiel de la République Française*, December 31, 1938, No. 358, p. 15.

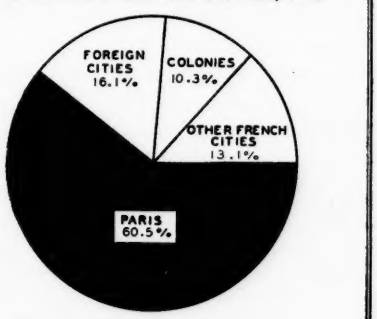
another 10% of the real estate investment. Northern African cities in particular have been looked upon with favor as locations. Finally, 16% of the realty is located in foreign cities—a not surprising situation when one recalls that the French insurance companies operate in many nations.

As for Italian insurance companies, investment practices with respect to real estate vary widely. Several companies have but 2% to 5% of assets in that medium, whereas others have as much as 50% of assets so invested. But the average is closer to 15%—or not far from the corresponding ratio for French insurance companies. The largest private Italian company, the old and well established Assicurazioni Generali of Venice and Trieste, founded in 1831 and doing a general insurance business, has more than 600,000,000 lire invested in directly owned real estate, free of mortgage. This investment constitutes approximately 20% of its total assets. The second largest private company, Riunione Adriatica of Milan and Trieste, has realty valued at more than 450,000,000 lire, or 25% of its total assets. These two companies, incidentally, account for close to ⅔ of the total assets of the private Italian insurance industry—partly because of total absorption of some other companies by a state insurance corporation. This Fascist-operated and fast growing Istituto Nazionale, to which private insurance companies are obliged to cede part of each life policy written[25] and which is now approximately twice the size of any private company, has realty in excess of 600,000,000 lire. This accounts for 10% of its assets, with public obligations of one type or another making up the preponderant part of the remainder. The real estate of the Italian insurance companies is largely urban, often consisting of large and imposing *palazzi* in the choice sections of Milan, Genoa, and other leading Italian cities.

CHART IV

PERCENTAGE DISTRIBUTION OF OWNED REAL ESTATE BY LOCATION OF PROPERTY

COMBINED REAL ESTATE ACCOUNT OF L'UNION, LA NATIONALE, AND COMPAGNIE D'ASSURANCES GÉNÉRALES, PARIS



In the United Kingdom, the company chiefly identified with ownership of housing and other real estate as an investment is the Prudential Assurance Company Limited, of London. This is the largest British life insurance company, and accounts for about ⅕ the assets of the industry. At the beginning of 1940, the investment of the Prudential in landed property was well in excess of £25,000,000, and comprised 8% of its total assets. Of the realty holdings, approximately ⅛ was office property used for the conduct of the business, ⅓ was ground rents, and the remainder, investment real estate of various categories. Particularly important in the latter are the large blocks of "flat" properties, erected by the company at various periods. Among the newer properties are those located at St. Mary Abbot's Court, Kensington, erected in 1928, and those at Bath Hill Court, Bournemouth, constructed in 1938 and 1939. Up to the out-

[25] Hausner, *op. cit.*, p. 174.

break of war, at least, the company's policy of direct investment in real estate had been continued, and even expanded. At the annual general meeting in March, 1939, the company's chairman expressed satisfaction with the experience on its "flat" properties,[26] and at the 1940 annual meeting it was announced that direct investment in realty had been extended to include the purchase of a large agricultural estate in the Midlands.[27]

Operating Results

It is possible only in limited degree to appraise the operating results that European insurance companies have had from directly owned real estate. But such data as are obtainable indicate a generally satisfactory experience.

As to occupancy ratios, Compagnie d'Assurances Générales reports that the ratio for its properties was 92.5% in 1936, 93.8% in 1937, and 95.8% at the end of 1938—the latest date for which figures are obtainable. Obviously these are satisfactory figures, but even higher occupancy ratios are reported by the Prudential Assurance Company Limited for its "flat" properties. Early in 1935 the occupancy ratio was 93%, by the end of 1937 it had climbed to 96.7%, and at the end of 1938 was 97.8%. These figures compare fairly well with the highly favorable occupancy experience of the Metropolitan Life Insurance Company of New York on its Long Island housing development.

As to earnings, there is complaint in the reports of some foreign companies of high operating costs, including taxes. But all French joint-stock life insurance companies earned on their realty, net before depreciation, about 4¼% in a recent year. That was about ¼% above the gross rate earned on all assets. Inspection of the statements of individual French insurance companies reveals wide differences in operating results, with some showing relatively small net earnings after depreciation, but others showing in 1938 results even better than those just mentioned. Hafnia of Copenhagen, the largest Danish life insurance company, earned 5.3% gross and 4.7% net on its realty in 1938. This compared with a rate of 4.8% earned on assets as a whole. As of a recent date, also, the entire landed property of the Prudential Assurance Company Limited of London had produced an income, after deduction of outgoing, equal to about 4¼% on its balance sheet value.

In their earnings computations, several of the European insurance companies assume a long life for their properties, and make relatively modest charges for depreciation. Thus, one French insurance company was depreciating its properties at the rate of ½% annually, another at the rate of 1% annually, and a third at a rate of 1½% per year, with a special depreciation charge of 1½% tacked on. Fleischmann states[28] that it has been the practice to depreciate low-rent housing in Germany at a rate of 1% annually, but he criticizes this as too low. However, reverting to the case of the French insurance companies, it should be recalled that the balance sheet values of their realty were already much below market value, offering another factor of safety.

In various European countries, the earnings experience on realty has been aided by tax-exemption features. In Germany, new low-rent housing, including land, was generally tax-exempt for 10 years after completion. In France,

[26] "The Prudential Report for 1938," *The Insurance Mail*, March 15, 1939, pp. 204–5.

[27] *The Post Magazine and Insurance Monitor*, April 13, 1940, p. 484.

[28] *Op. cit.*, pp. 124–5.

unless war conditions have brought about a change, new construction, reconstruction, and additions are virtually tax-free for a period of two years. The duration of this exemption had been extended to 15 years for buildings or portions of buildings devoted to dwelling purposes, provided their construction was completed before 1941. Other new properties, completed before 1941, had likewise been granted a special exemption from taxes for 10 years. Insurance company owners enjoyed these exemptions in common with other owners of realty.

A partially offsetting factor to the favorable ones just mentioned is the subjection of European realty, in times of war or other emergency, to government rent decrees. In this respect, the French experience is not unlike that of other European nations. There, for example, almost at the outbreak of the most recent conflict, the government empowered the courts to drastically reduce rent for mobilized lessees, where the latter could prove that the war had impaired their financial capacity. Outright cancellation of leases by mobilized lessees was likewise provided for, and non-mobilized lessees could ask for delay in payment, under exceptional circumstances. Property owners, in turn, who suffered because of these decrees, were given the right to delay payment of mortgage interest, on proof that the war had deprived them of substantial portions of their customary revenue. However, these disabilities usually are temporary.

Viewed in entirety, the housing and other realty owned by European life insurance companies have proved successful investments. That is true not only as regards maintenance of capital values, but also as to general earning power, with some exceptions. Obviously, a very special kind of skill is necessary for successful real estate investment and operation, and that the larger European companies have supplied. Perhaps the surest proof of their confidence in real estate is that they had continued to place new funds in that medium, until the outbreak of the war. Whether recent war-time developments abroad have irreparably altered the picture remains to be seen.

A Review of Railroad Financing, 1920–1938:
II. Types and Methods of Financing

By HERBERT E. DOUGALL* and LORING C. FARWELL†

THE first installment of this article[7] contained a discussion of the volume of new railroad securities issued from May, 1920 to December, 1938 and an analysis of the cost of railway borrowed capital during that period. The present article is concerned with the qualitative aspects of railway financing during the same period.

III. Railroad Capital Structure

Table VI provides a picture of the capital structure of the industry at five-year intervals since 1920 and reveals in simple fashion the degree to which the railroads have relied for their permanent capital upon funded debt, stock, and reinvested earnings.

Much criticism has been directed against the industry's policy of heavy emphasis upon funded debt financing, which burdened it with half a billion dollars of interest charges and left it vulnerable to the decline in earnings which began in 1930, and which has carried almost ⅓ of railroad mileage into receivership or bankruptcy. The Interstate Commerce Commission, in its annual report for 1936, suggested that the carriers had made little effort to reduce their interest-bearing debt or build up their surplus out of earnings.[8] The following discussion is designed to analyze and interpret the financial policies pursued during the period.

However, before going into detail on various aspects of financial policy, a few observations may be made on the general picture presented in Table VI. During the early 20's stock and surplus increased sufficiently to offset the increase in funded debt, leaving the latter's proportion of total capital structure the same. Although it would have been desirable for the carriers to have done more stock financing, bonds were more attractive to investors, both individual and fiduciary, than were stocks.[9] However, as revealed in Table VII, from 1920 to 1924 inclusive, while investment in road and equipment of all carriers increased 2.3 billion dollars, securities outstanding increased only 1.7 billions. A substantial reliance upon reinvested earnings and reserves as a source of permanent capital is thus indicated.

During the period 1925–29 the railroads turned to stock and reinvested earnings as sources of permanent capital to an unprecedented degree. Table VI shows that, while funded debt outstanding actually decreased in amount, preferred and common stock increased 585 millions and surplus 1,688 millions. "The switch to stock and surplus as the major sources of funds was due to the strength of the stock market and the increasing earnings of the industry."[10] Since 1929 the poor earnings record of the industry

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[7] Herbert E. Dougall and Loring C. Farwell, "A Review of Railroad Financing, 1920–1938: I. Volume and Cost of Railroad Capital," 16 *Journal of Land & Public Utility Economics* 207–13 (May, 1940). Tables and footnotes are numbered consecutively with those in the first installment.

[8] ICC, *Annual Report*, 1936, pp. 16–7.

[9] H. G. Guthmann and H. E. Dougall, *Corporate Financial Policy* (New York: Prentice-Hall, Inc., 1940), p. 309.

[10] *Ibid.*, pp. 309–10.

TABLE VI. CAPITAL STRUCTURES OF RAILROADS, DECEMBER 31, 1920–1938*
(In Millions)

	1920		1924		1929		1934		1938	
	Amount	Per Cent	Amount	Per Cent	Amount	Per Cent	Amount	Per Cent	Amount	Per Cent
Bonds	$12,778	51.1	$14,162	51.6	$14,065	47.9	$14,532	50.6	$13,766	51.1
Preferred stock†	1,898	7.6	1,935	7.1	2,065	7.0	2,044	7.1	2,049	7.6
Common stock†	7,215	29.0	7,539	27.5	7,853	26.6	7,994	27.9	8,040	29.9
Surplus	3,087	12.3	3,784	13.8	5,472	18.5	4,122	14.4	3,073	11.4
Total	$24,978	100.0	$27,420	100.0	$29,455	100.0	$28,692	100.0	$26,928	100.0

* ICC, *Statistics of Railways in the U.S.*, 1938, Table 155, p. 142. Includes Class I, II, III and lessor carriers. Includes securities nominally issued and nominally outstanding.
† Includes no-par stock carried at consideration received.

has precluded the use of stock as a source of new funds except in the case of the strongest carriers, and surplus has been materially reduced by deficit operations.

TABLE VII. CAPITALIZATION AND INVESTMENT IN ROAD AND EQUIPMENT*
(In Millions)

Year	Investment	Capitalization
1920	$19,849	$21,891
1924	22,182	23,636
1929	24,414	23,983
1934	24,791	24,570
1938	24,756	23,855
Increase 1920–1938	4,907	1,964

* ICC, *Statistics of Railways in the U. S.*, 1938, Table 155, p. 142. Includes Class I, II, III and lessor roads.

IV. Railroad Financial Policies

1. Debt Retirement through Sinking Funds. Had the carriers followed the practice of making regular provision for debt reduction by establishing sinking funds or by serial retirement, the burden of debt at the time they were overtaken by the decline in earnings would have been much easier to bear. But, save for equipment trust certificates, which are almost always serially retired, the debt has been thought of as permanent, to be refunded rather than repaid. This attitude was based on the assumption that the earnings of the industry would, under regulation and in the absence of substantial competition, always be sufficient to meet interest charges and to permit refunding at maturity, and on the assumption of the fixed nature of the carriers' assets. A survey of the bond issues sold since the first world war reveals only 22 serial issues, and only 16 in which the term "sinking fund" appears in the bond name. But the name of an issue is a poor indicator of its real nature. Fortunately, a comprehensive study is available which shows the extent to which sinking funds have been used. W. H. S. Stevens, in *Railroad Sinking Funds and Funded Debt*[11] reports (pp. 17–20) that, as of December 31, 1935, of the 51 large Class I railroads whose total debt (9 billion dollars) comprised 70% of the total debt of all railroads, 28 had "sinking fund" debt outstanding in the amount of 1.4 billions, or 15.6% of their total debt. However, of this so-called "sinking fund" debt, only 112 millions required unconditional payments.

Recognizing that the burden of railroad debt would have to be reduced, the Commission, in its report for 1933, indicated that it was giving consideration to methods of bringing about a reversal of the present trend in railway financing:

"We believe that the desired results can be obtained, in part at least, through the pro-

[11] Washington, ICC, 1939.

vision of sinking funds to be set up by the railway companies out of net income for the purpose of retiring a part of their funded debt before maturity. If such funds are not voluntarily established by the railway companies, their establishment may be required as a condition to our authorization of further bond issues under the provisions of section 20a of the Interstate Commerce Act."[12]

The subsequent policy of the Commission is indicated in its report for 1936:

"In all cases where we have been called upon to approve the actual issue of bonds we have insisted that the applicant make provision for the retirement of all or part of the bonds before maturity and have required that sinking funds be provided, unless good and sufficient reasons appeared for not doing so."[13]

The effect of the Commission's policy is seen not so much in the provisions of the issues of the stronger concerns able to refund old debt or sell new bonds during the past few years as in the issues proposed for failed companies undergoing financial reorganization.

"Practically all railway companies that have filed plans for the reorganization of their properties under the provision of section 77 of the Bankruptcy Act have included provisions for sinking funds to be set up out of earnings and many of them have also included provisions for sinking funds out of earnings for additions and betterments."[14]

Sound though the idea may be, it is clear that the process of debt reduction through mandatory sinking funds is too slow to give any material relief to the railroads now in distress. And carriers whose investment is steadily increasing would have to issue new securities to the extent that earnings are diverted into sinking funds rather than into new property. Rigid sinking fund requirements may work a hardship by requiring the reduction of debt instead of allowing investment in improvements desirable from the competitive point of view and from that of public service. Accordingly, some have advocated flexible sinking fund arrangements.[15]

2. Reinvestment of Earnings. The data on capital structure presented above reveal the very considerable degree to which the carriers relied on reinvestment of earnings in the post-war period, especially in 1925–29. In addition to the growth of assets represented by the increased balance in the surplus account, capital represented by depreciation reserves also increased substantially. Such reserves, for all carriers, rose from $1,081 millions at the end of 1920 to $1,550 millions at the end of 1924, $2,170 millions at the end of 1929, $2,765 millions at the end of 1934, and $3,045 millions at the end of 1938.[16] Such increases in surplus and reserves weaken considerably the argument that railroad management as a whole followed a reckless policy of overcapitalization. It is true that individual carriers leaned far too heavily on the sale of bonds and were overgenerous in dividend payments, but it should also be remembered that the rate of return earned by the industry was never substantial, even in the 20's, and left but a small share of gross income available for dividends or reinvestment.[17] Table VIII indicates the earnings and dividend record of all railways from 1920 through 1938. In those years when dividend payments exceeded net income, a partial explanation of the seeming prodigality lies in the fact that, whereas individual carriers might have earned and paid large dividends, others contributed even larger deficits and thus produced a

[12] ICC, *Annual Report*, 1933, p. 26.
[13] ICC, *Annual Report*, 1936, p. 17.
[14] *Ibid.*, pp. 17–8.
[15] For example, see Irvin Bussing, *Railroad Debt Reduction* (New York: Savings Banks Trust Co., 1937).
[16] ICC, *Statistics of Railways in the U. S.*, 1938, Table 155, p. 142.
[17] See Table II, first installment.

red net income figure for the group.

With reference to railroad dividend policies Moulton concludes:

"We see nothing in this record to justify a conclusion that in 1922–1929 the railroad managements were guilty of excessive liberality in the payment of dividends, no matter whether the question be reviewed from the standpoint of private finance or from that of the public interest."[18]

But he goes on to say:

"There is, however, just ground for criticism of the dividend record of 1931 . . . there are cases where dividend payments were continued well into 1931 by railroads which were bound to need the money for fixed charges if the course of the depression was not quickly reversed."[19]

3. Use of Convertible Bonds. The convertible bond affords the issuer the advantages of trading on the equity while the bonds remain unconverted, and the possibility of conversion into common stock with the resulting decrease in debt and interest. During the period of more substantial earnings, most of the railroads were under little pressure to eliminate debt, were able to sell bonds without adding this sort of inducement, and made little use of the feature. It appears now that, for the stronger carriers at least, the issuance of convertible bonds involving attractive conversion prices might have done much to reduce their debt prior to the disastrous 30's, and that the dilution of the common stock which would have resulted would not have been a serious consideration for either the management or stockholder groups, since it is customary to offer the convertible bonds first to the existing owners of stock. Examples of successful offerings of convertibles after 1930 are rare, as is to be expected from the spotty earnings record since that year. In 1934, faced with maturing debt, the New York Central issued $59,911,900 secured convertible debentures of 1944, most of which were converted before 1937; with

[18] H. G. Moulton and Associates, *The American Transportation Problem* (Washington: Brookings Institution, 1933), p. 316.

[19] *Ibid.*, pp. 319–20.

TABLE VIII. EARNINGS AND DIVIDEND PAYMENTS*
(In Millions)

Year	Available for Charges	Deductions: Rent and Interest	Net Income	Dividends	Ratio Dividends to Net Income (Per cent)
1921	$1,091	$740	$351	$456	130
1922	1,184	750	434	339	78
1923	1,393	761	632	412	65
1924	1,401	778	623	385	62
1925	1,562	791	771	410	53
1926	1,681	798	883	474	54
1927	1,545	803	742	567†	76
1928	1,654	799	855	510	60
1929	1,783	806	977	561	58
1930	1,387	809	578	603	104
1931	967	798	169	401	238
1932	667	789	122‡	151	—
1933	817	790	27	159	590
1934	801	778	23	212	923
1935	821	769	52	203	390
1936	1,007	785	222	232	104
1937	896	750	146	228	156
1938	639	726	87‡	136	—

* ICC, *Statistics of Railways in the U. S.*, 1938, Table 155, p. 142.
† Includes unusual items, not cash $76,300,000.
‡ Deficit.

the later favorable stock market the company forced their conversion as a preliminary to the sale of secured convertible 3½'s in June, 1937. Examples of recent convertible issues which have remained unconverted include the Great Northern issues offered in 1936, totalling $98,500,000, and the $52,670,000 convertible debenture 3¼'s offered by the Pennsylvania Railroad in 1937.

Although convertible bonds may be offered when the market will not absorb high-grade issues at low rates, the possibility, of course, remains that they may never be converted and so may add permanent debt at relatively high interest rates. However, by setting the conversion price low and by inserting the call feature, the maximum control over the debt can be obtained.

4. Maturity. Contrary to the general impression, very long maturities have not dominated in railroad debt financing —at least in the post-war period.[20] Of the bonds authorized by the Interstate Commerce Commission since the return of the carriers to private control in 1920, more fell within the 21–30 year group than in any other 10-year group. The second most important group was the 11–20 year group, and the third, the 41–50 year group. Only 6% had maturities of over 51 years, whereas 18% had maturities of 10 years or less. Of the total, 47% fell due in from 11 to 40 years.

From 1930, the maturities deviated considerably from the general pattern. The importance of very short and very long maturities increased considerably. This was attributable to two influences: (1) the policy of the stronger lines to refund at the lower rates for as long a period as possible; (2) the large number of issues of bonds representing short-term extensions of debt falling due in the years of lowered earnings.

5. Financing with Stock. We have seen the extent to which the carriers have relied on the sale of stock as a source of permanent investment. It has been noted that except during the period 1925–29, the majority of carriers did not enjoy profits substantial enough to attract equity capital and as a result many were obliged to continue financing with bonds. The roads which could have used the proceeds of stock sales to reduce their funded debt did not feel the need of doing so, and the weaker carriers were unable to do so. The carrying charges on bonds were so much lower than the rate of earnings required on stock, even in the period 1925–29, that the dilution of the common's earning power would have seemed most undesirable.

"Therefore even in those cases where, by careful management and timing, bonds might have been refunded into common stock, the temptation was strong to let matters alone and retire bonds only when retained earnings were not greatly needed for improvements and additions and could be used to pay off convenient small maturities."[21]

And as Moulton suggests:

"Looking backward now, it is easy to say of many roads that if they had taken advantage of the investment situation in 1925–1929 to float stocks they would be in better financial shape now. . . . But we can hardly take the position that managements of railroads ought to have foreseen the coming of the greatest depression in history, and to have learned of it by methods not available to

[20] "As a result of practical experience we know that technical and social changes come rapidly and that future generations demand the benefit of new inventions and improved living regardless of the burdens handed down to them in the past. This points to slight justification for long-term debt incurred for 100 years or more and suggests a term approximately the life of a generation, which is reckoned to be in the order of 25 to 30 years. It should be noted that most highway debt is now conforming to this standard." (Kent T. Healy, *The Economics of Transportation in America* (New York: Ronald Press Co., 1940), p. 300.)

[21] Guthmann and Dougall, *op. cit.*, p. 311.

those to whom it was proposed to sell the stocks."[22]

An interesting feature of railroad financing has been the growing tendency to use stocks without par value. In the previous article it was noted that, from 1920 to 1938 inclusive, 15,180,869 shares of no-par stock were issued to which no value was assigned. These shares, together with those to which values had been assigned, make a total of 16,008,843 shares with an approximate valuation of $1,200,000,000, or 40% of the value of all stocks issued during the period.[23]

The use of no-par stock has offered several advantages to the railroads. In the first place, it avoids the laws of many states which prohibit the sale of stock below par value. Carriers such as the Southern Railway, the Great Northern, and the New York Central have changed their stock from par to no-par in order to offer bonds convertible into common at prices lower than the original par value. More important, it permits the corporation going through recapitalization or reorganization to reduce the stated value with ease and thus create a capital surplus against which it may write down inflated asset values, and to exchange large amounts of stock for senior securities without adding substantially to the dollar capitalization.

6. Reduction of Debt through Reorganization. Although the railroad industry had experienced other waves of failure,[24] the combined assault of depression and the new competition brought on an unprecedented series of failures in the 30's. As of December 31, 1938, 109 carriers were in receivership or trusteeship, operating 76,938 miles of road, or 30.7% of the entire railway mileage.[25] Since 1930 the process of reorganization of these failed lines had made but little progress, despite changes in reorganization procedure inaugurated in the amendments to the Bankruptcy Act. As of October 31, 1939, only 29 receivership proceedings and 31 bankruptcy proceedings had come before the ICC; only four final reports of the Commission had been approved by the courts; and only two plans of major carriers had been submitted to creditors and stockholders for their acceptance or rejection.[26]

Although the lack of progress in railroad reorganization may be attributable in part to the involved procedure required by the law and to the numerous approvals required, it may be attributed chiefly to the delayed recovery of railroad earnings. It is difficult to get the approval of various classes of security holders to plans of reorganization which are based on the low earnings of the past few years. And the attitude of the Commission, as revealed in such cases as the Chicago and North Western, the New Haven, and the Missouri Pacific, in eliminating the entire equity of the stockholders, is leading to appeals to the courts that the plans be rejected and referred back to the Commission.

Table IX shows the drastic changes involved in 21 plans approved by the Commission or proposed by its examiners.

V. The Contributors and Their Contributions

The contributors of capital to the railways through the purchase of securities include the investing public, banks

[22] Moulton, *op. cit.*, p. 309.

[23] For data on the consideration received for no-par shares issued by Class I carriers, see ICC, *Statistics of Railways in the U. S.* (annual), Table 19.

[24] For an account of reorganizations in the worst pre-war period of failure, see E. G. Campbell, *The Reorganization of the American Railroad System, 1893–1900* (New York: Columbia University Press, 1938).

[25] ICC, *Statistics of Railways in the U. S.*, 1938, Table 151, p. 137.

[26] *Annual Report*, ICC, 1939, pp. 59–61.

TABLE IX. CHANGES IN CAPITALIZATION IN APPROVED PLANS OF REORGANIZATION*
(In Millions)

	Long-Term Debt	Stock	Total
Capitalization before reorganization.....	$2,724	$1,210 1,475†	$3,934 1,475†
Capitalization approved or recommended.....	$1,335	$ 732 11,507†	$ 2,067 11,507†
Changes in capitalization	−$1,389	−$ 478 +10,032†	−$1,867 10,032†

* ICC, *Annual Report*, 1939, p. 64.
† Shares of no-par stock.

and insurance companies, individuals or general corporate groups having an interest in the control of railroads or in property desired by the railroads, the government and governmental agencies, and the railroads themselves. However, for the purposes of analysis of the distribution of railroad securities, the classification used must fit the data at hand, which is confined to the holders rather than to the ultimate investors in those securities. Since the data on the distribution of stock are incomplete, the discussion is restricted to securities classified as bonds, equipment obligations, and miscellaneous obligations.[27]

The contributions of the various purchasers of railroad securities in each year of the post-war period are set forth in Tables X to XIII. Tables X to XII inclusive show the recipients of each of the three main types of securities. Table XIII groups the allocation of all types of obligations—bonds, equipment trust certificates, and miscellaneous obligations. The annual totals coincide with those shown in Table I of the first installment.[28] Asterisks in the tables refer to amounts of less than $50,000.

The groupings used in the data require a careful description. The classification "Public" is of greatest over-all importance. All issues for which resale price information is available, for which resale at an undisclosed price is definitely indicated, or for which distribution by means of rights or warrants is suggested are included under this head.

Issues which were transferred without indication of resale have been classed under the second main heading, "Private" sales, unless they could be placed under one of the several other headings defined below. The purchaser may have been a corporation other than a railroad or government agency, an individual, or an investment banking firm. To facilitate interpretation, this class has been further broken down into sub-classes as follows: (1) Those sales noted as private in the data—and, presumably, reported to the ICC as such; these sales probably arose through direct deals between the purchaser and the issuing corporation, although it is to be noted that in some cases competitive bidding is indicated and therefore the transaction was not necessarily private in the sense that it was originated and carried through without the knowledge or interest of parties other than the two finally involved;[29] (2) Certain sales which cannot

[27] The items included under each of these headings were indicated in the first installment.

[28] The total of miscellaneous obligations for 1931 cited in Table I of the first installment should have read $68.6 millions, and the total for the entire period should have read $1,113.9 millions.

[29] During recent years a considerable controversy has arisen over the advantages and disadvantages of competitive bidding for railway and utility bonds. Beginning in 1926, the ICC required sealed competitive bids for issues of equipment trust certificates, and to the end of 1938, some 20 issues of railroad bonds totalling nearly 44 millions were offered in this manner instead of by the ordinary underwriting process wherein one or two investment banking houses arrange the deal in advance. Competitive bidding has been particularly noticeable in the case of terminal obligations. The following references provide accounts of the pros and cons of this method of sale: Francis E. Fotheringham, "Public Bidding vs. Private Sales," *Investment Banking*,

(*Footnote 29 continued on page 313*)

TABLE X. ALLOCATION OF BONDS
(In Millions)

Year	Public	Private					Exchanges and Extensions	Railroads	Government and Special						Total
		Noted	No Price	Banks	Insurance Companies	Total			PWA	RFC	Other Federal	RCC	State	Total	
1920	25.0	—	—	—	—	—	3.8	6.9	—	—	—	—	—	—	35.7
1921	342.2	.5	3.3	—	—	3.8	2.9	4.3	—	—	—	—	—	—	353.2
1922	304.8	8.9	2.4	1.5	—	12.8	*	—	—	—	—	—	—	—	317.6
1923	156.1	2.2	60.5	3.0	.4	66.1	13.5	4.4	—	—	—	—	—	—	240.1
1924	433.7	7.9	4.3	.3	—	12.5	5.2	3.3	—	—	—	—	—	—	454.7
1925	322.2	—	13.7	1.4	—	15.1	.3	19.4	—	—	—	—	—	—	357.0
1926	207.2	—	14.4	.2	—	14.6	1.6	41.3	—	—	11.6	—	—	11.6	276.3
1927	503.8	—	5.5	2.5	—	8.0	3.7	49.1	—	—	—	—	—	—	564.6
1928	351.2	.9	8.5	.6	1.6	11.6	290.6	30.8	—	—	—	—	—	—	684.2
1929	250.8	3.6	98.7	5.4	—	107.7	1.1	76.4	—	—	—	—	—	—	436.0
1930	675.1	—	2.4	.3	—	2.7	11.4	96.3	—	—	—	—	—	—	785.5
1931	330.8	10.0	6.9	*	—	16.9	11.5	37.5	—	—	—	—	—	—	396.7
1932	—	—	1.5	—	—	1.5	9.5	81.1	—	6.0	—	—	—	6.0	98.1
1933	12.0	—	*	—	—	*	103.6	66.0	—	—	—	—	—	—	181.6
1934	135.6	19.4	4.8	—	—	24.2	11.8	22.7	39.7	—	—	—	—	39.7	234.0
1935	57.5	—	3.3	—	9.7	13.0	49.6	.7	9.1	28.9	—	—	—	38.0	158.8
1936	497.7	—	4.7	—	1.5	6.2	119.3	9.1	.8	—	—	—	—	.8	633.1
1937	162.3	.4	15.0	—	7.2	22.6	30.9	5.9	—	—	—	—	5.0	5.0	226.7
1938	—	—	32.0	—	—	32.0	55.7	20.5	—	.5	—	—	—	.5	108.7
Total	4768.0	53.8	281.9	15.2	20.4	371.3	726.0	575.7	49.6	35.4	11.6	—	5.0	101.6	6542.6

* Means an amount of less than $50,000.

be classified other than as private because no resale price information is available. The majority of these sales were made to investment banking houses —presumably operating as bankers rather than as underwriters—to corporations, and to individuals. There is no reason to believe that a portion of these securities did not eventually reach other hands, but the data give no direct indication of such transfers; (3) A large group of transactions between railroads and banks. Some of these transactions undoubtedly did result from deals in which the bank acted as an investment banking house but, since the probability is that most of the transactions were for the account of the bank or for trust departments, these have been grouped together; (4) A small group of direct transactions between the railroads and insurance companies. In such cases, it is probable that the securities remained in the hands of the purchasing company.

The third main group, "Exchanges and Extensions," is composed of the obligations which were issued in exchange for outstanding debt and, particularly in more recent years, many issues which were revised or extended. These issues represent refunding of a sort.

All issues for which transfer from one railroad to another was indicated have been classed under the fourth heading, "Railroads."

Finally, several public agencies have purchased railroad securities. The fifth and last main group, "Government and Special," includes the following contributors: (1) The Federal Emergency Administration of Public Works (now PWA), but the Reconstruction Finance Corporation subsequently purchased a

(*Footnote 29 continued from page 312*)

June, 1939, pp. 19–21; H. G. Guthmann and H. E. Dougall, *op. cit.*, pp. 353–6; Franklin T. McClintock, "Competitive Bidding," *Investment Banking*, September, 1939, pp. 24–9; Harold Stanley, *Competitive Bidding for New Issues of Corporate Securities* (New York: Morgan Stanley & Co., 1939). For an account of the early development of competitive bidding see B. J. Sickler, "History and Results of Competitive Bidding for Railroad Equipment Trust Certificates," 5 *Journal of Land & Public Utility Economics* 71–8 (February, 1929).

TABLE XI. ALLOCATION OF EQUIPMENT TRUST CERTIFICATES
(In Millions)

Year	Public	Private					Exchanges and Extensions	Railroads	Government and Special						Total
		Noted	No Price	Banks	Insurance Companies	Total			PWA	RFC	Other Federal	RCC	State	Total	
1920	15.0	.8	—	—	—	.8	—	—	—	—	—	—	—	—	15.8
1921	32.2	6.1	1.7	.7	—	8.5	—	—	—	—	—	—	—	—	40.7
1922	97.9	17.4	4.2	2.0	—	23.6	—	.3	—	—	—	—	—	—	121.8
1923	274.1	14.3	8.1	.1	—	22.5	—	—	—	—	—	—	—	—	296.6
1924	207.3	11.4	3.0	1.6	—	16.0	—	—	—	—	—	—	—	—	223.3
1925	99.8	3.6	22.8	1.7	—	28.1	—	18.0	—	—	—	—	—	—	145.9
1926	101.7	7.2	17.0	.4	—	24.6	—	—	—	—	—	—	—	—	126.3
1927	60.1	6.3	7.0	1.7	—	15.0	—	.2	—	—	—	—	—	—	75.3
1928	33.5	16.6	3.7	1.3	—	21.6	—	—	—	—	—	—	—	—	55.1
1929	105.4	8.2	13.8	—	—	22.0	—	.6	—	—	—	—	—	—	128.0
1930	104.7	.5	4.3	—	—	4.8	—	.5	—	—	—	—	—	—	110.0
1931	13.0	—	4.4	—	—	4.4	—	.2	—	—	—	—	—	—	17.6
1932	3.4	—	2.4	—	—	2.4	—	—	—	—	—	—	—	—	5.8
1933	.6	.5	—	—	—	.5	—	—	—	—	—	—	—	—	1.1
1934	—	—	—	.5	1.7	2.2	.3	—	75.4	—	—	—	—	75.4	77.9
1935	11.7	—	—	—	.4	.4	—	—	28.4	—	—	—	—	28.4	40.5
1936	50.7	8.8	11.8	1.8	—	22.4	—	—	3.9	4.0	—	—	—	7.9	81.0
1937	74.9	30.2	36.8	4.1	22.6	102.7	26.7	2.5	.1	—	—	—	—	.1	206.9
1938	—	4.3	13.0	—	3.0	20.3	.1	—	—	13.5	—	—	—	13.5	33.9
Total	1286.0	145.2	154.0	15.9	27.7	342.8	27.1	22.3	107.8	17.5	—	—	—	125.3	1803.5

large proportion of the securities sold to the PWA; (2) The RFC, which has aided the railroads in part by direct loans and in part by purchase of securities. Only the latter have been included under this heading. (The importance of the RFC as a lending agency is indicated in Table X.); (3) Miscellaneous federal agencies which have occasionally advanced funds to railroads by purchase of securities; (4) The Railroad Credit Corporation; in total, the RCC made advances of 74 millions, but only advances through the medium of security purchases are carried under this heading; (5) Two states—Massachusetts and Vermont—which have made direct purchases of issues.

None of these classifications is completely inclusive or exclusive. Securities for which resale prices are available may not have been distributed generally but may have been purchased by a single individual. Nor does the lack of resale information preclude the possibility of general distribution. A commercial bank may have acted as an underwriter, and some cases of resale by banks are directly noted in the data and are included in the "public" category. The RFC may, and did, purchase securities of railroads from other than the issuing corporation. A railroad may purchase securities for later resale or may purchase securities of subsidiaries and use them as collateral for another issue of its own.

1. Public Offerings. Of the entire group of obligations, those which were sold to the public constitute a distinct majority. For the full 18½-year period, sale of obligations to the public accounted for 66% of the total volume of financing. In the 20's, 4/5 may be classified under this heading and, despite virtual extinction in 1932–33, they accounted for 30–35% of the total during 1932–38. They have played an important role in the distribution of bonds and equipment obligations in almost all years except 1932–33 and 1938. The miscellaneous obligations falling within this class have been fairly sizable, but their over-all importance is relatively less than that of public offerings

of bonds and equipment obligations.

2. Private Deals. Private deals account for 12% of the total volume of financing over the whole period. They have been primarily important in the distribution of miscellaneous obligations, of secondary importance in equipment obligations, and of minor importance in bonds. As might be expected, the subclassification covering transactions between individuals, corporations, and investment banking houses for which no resale information is available bulks large. A considerable number of these deals have involved the transfer of securities for property or services. With reasonable market conditions, these securities probably were resold. In some cases, however, they may have been held for investment purposes. The somewhat smaller number of transactions noted as "private" in the data collected cannot be readily classified as to type of contribution. However, their importance in the equipment obligation group suggests investment buying by major investors, corporate or private. The banks have been particularly active in the purchase of miscellaneous obligations, accounting for roughly ¼ of the total volume. (It will be recalled that this group includes short-term corporate notes, promissory notes, and receivers' certificates.) Although they have shown some tendency to comprise a somewhat smaller and declining volume during the last four years, the general level of bank contributions in the '30s has been above the level of the '20s. Insurance companies were not actively making direct deals until 1934. But in 1935 they provided 3% and, in 1937, 7% of the total volume. The over-all significance of insurance company investment is small compared to other groups, but the potentialities—particularly in the distribution of bonds and equipment obligations—are of interest. The banks and the insurance companies may find it necessary to take a greater proportionate interest in rail financing in the future—either to protect present investments under continued unhealthy railway operating conditions or in an effort to diversify and

TABLE XII. MISCELLANEOUS OBLIGATIONS
(In Millions)

Year	Public	Private					Exchanges and Extensions	Railroads	Government and Special						Total
		Noted	No Price	Banks	Insurance Companies	Total			PWA	RFC	Other Federal	RCC	State	Total	
1920	—	—	1.0	2.0	—	3.0	—	—	—	—	—	—	—	—	3.0
1921	2.0	—	1.0	3.8	—	4.8	—	*	—	—	—	—	—	—	6.8
1922	—	—	.1	—	—	.1	—	—	—	—	10.0	—	—	10.0	10.1
1923	19.6	—	1.6	1.0	—	2.6	—	5.0	—	—	—	—	—	—	27.2
1924	48.4	—	.6	1.7	—	2.3	—	—	—	—	—	—	—	—	50.7
1925	1.0	—	2.0	11.3	—	13.3	1.6	1.8	—	—	—	—	—	—	17.7
1926	6.3	—	13.5	3.3	—	16.8	—	4.0	—	—	1.4	—	—	1.4	28.5
1927	12.5	—	9.9	6.0	—	15.9	.2	15.7	—	—	—	—	—	—	44.3
1928	7.5	3.0	12.0	10.0	—	25.0	.2	2.8	—	—	—	—	.2	.2	35.7
1929	20.0	2.0	4.2	2.3	.4	8.9	—	2.4	—	—	—	—	*	*	31.3
1930	5.0	—	7.0	14.7	—	21.7	—	49.4	—	—	—	—	—	—	76.1
1931	30.0	—	17.4	20.5	—	37.9	—	.7	—	—	—	—	—	—	68.6
1932	—	—	6.6	30.7	.1	37.4	49.1	29.7	—	6.2	—	12.6	—	18.8	135.0
1933	—	—	.6	7.9	—	8.5	3.8	30.0	—	—	—	11.1	—	11.1	53.4
1934	—	—	36.6	56.5	—	93.1	19.9	10.2	44.7	—	—	2.7	—	47.4	170.6
1935	12.0	—	1.8	24.3	—	26.1	24.0	48.2	4.2	*	—	5.5	—	9.7	120.0
1936	31.3	—	25.1	14.2	—	39.3	20.4	55.0	6.2	.2	.3	—	—	6.7	152.7
1937	—	—	5.9	7.7	—	13.6	1.0	.1	—	—	—	—	—	—	14.7
1938	16.0	—	1.1	7.2	—	8.3	11.3	2.4	—	29.5	—	—	—	29.5	67.5
Total	211.6	5.0	148.0	225.1	.5	378.6	131.5	257.4	55.1	35.9	11.7	31.9	.2	134.8	1113.9

* Means an amount of less than $50,000.

TABLE XIII. ALLOCATION OF ALL OBLIGATIONS
(In Millions)

Year	Public	Private					Exchanges and Extensions	Railroads	Government and Special						Total
		Noted	No Price	Banks	Insurance Companies	Total			PWA	RFC	Other Federal	RCC	State	Total	
1920	40.0	.8	1.0	2.0	—	3.8	3.8	6.9	—	—	—	—	—	—	54.5
1921	376.4	6.6	6.0	4.5	—	17.1	2.9	4.3	—	—	—	—	—	—	400.7
1922	402.7	26.3	6.7	3.5	—	36.5	*	.3	—	—	10.0	—	—	10.0	449.5
1923	449.8	16.5	70.2	4.1	.4	91.2	13.5	9.4	—	—	—	—	—	—	563.9
1924	689.4	19.3	7.9	3.6	—	30.8	5.2	3.3	—	—	—	—	—	—	728.7
1925	423.0	3.6	38.5	14.4	—	56.5	1.9	39.2	—	—	—	—	—	—	520.6
1926	315.2	7.2	44.9	3.9	—	56.0	1.6	45.3	—	—	13.0	—	—	13.0	431.1
1927	576.4	6.3	22.4	10.2	—	38.9	3.9	65.0	—	—	—	—	—	—	684.2
1928	392.2	20.5	24.2	11.9	1.6	58.2	290.8	33.6	—	—	—	—	*2	*2	775.0
1929	376.2	13.8	116.7	7.7	.4	138.6	1.1	79.4	—	—	—	—	*	*	595.3
1930	784.8	.5	13.7	15.0	—	29.2	11.4	146.2	—	—	—	—	—	—	971.6
1931	373.8	10.0	28.7	20.5	—	59.2	11.5	38.4	—	—	—	—	—	—	482.9
1932	3.4	—	10.5	30.7	.1	41.3	58.6	110.8	—	12.2	—	12.6	—	24.8	238.9
1933	12.6	.5	.6	7.9	—	9.0	107.4	96.0	—	—	—	11.1	—	11.1	236.1
1934	135.6	19.4	41.4	57.0	1.7	119.5	32.0	32.9	159.8	—	—	2.7	—	162.5	482.5
1935	81.2	—	5.1	24.3	10.1	39.5	73.6	48.9	41.7	28.9	—	5.5	—	76.1	319.3
1936	579.7	8.8	41.6	16.0	1.5	67.9	139.7	64.1	10.9	4.2	.3	—	—	15.4	866.8
1937	237.2	39.6	57.7	11.8	29.8	138.9	58.6	8.5	.1	—	—	—	5.0	5.1	448.3
1938	16.0	4.3	46.1	7.2	3.0	60.6	67.1	22.9	—	43.5	—	—	—	43.5	210.1
Total	6265.6	204.0	583.9	256.2	48.6	1092.7	884.6	855.4	212.5	88.8	23.3	31.9	5.2	361.7	9460.0

* Means an amount of less than $50,000.

enhance their investment portfolios in an industry which might recover after severe reorganization operations.

3. Exchanges and Extensions. Until the advent of the depression, exchanges were the result of conversion of bonds or of reorganization and extensions were rare, except in 1928. In that year the reorganization of the Chicago, Milwaukee, St. Paul and Pacific Railroad resulted in the exchange of 290 millions of new bonds for bonds of the original company, accounting for very nearly 100% of the total amount during that year. But in 1932 and 1933, exchanges and extensions accounted for 24% and 45% of the total volume. And throughout the remainder of the period they have continued to be relatively important—even in the equipment obligation field where 13% of the 1937 financing was done by exchange of obligations. Present indications are, of course, that the importance of this class will increase during the years ahead as reorganization procedures are completed and as more carriers take advantage of the latest amendments to the Bankruptcy Act providing for voluntary adjustments of debt. If this class were grouped with the "public" offering class in order to measure the degree to which financing results from the contributions of widely distributed sources, the relative importance of public offerings would show very little decline from the levels of the '20s and they would continue to hold their position as the most important source of funds for the railroads.

4. Intercompany Financing. The railroads have contributed much to each other. The aggregate amount of intercompany financing from May, 1920 to December, 1938 accounts for 9% of the total volume. The proportionate amount contributed by the rails increased fairly steadily as the '20s passed, reaching extreme peaks of 47% and 41% respectively in 1932 and 1933. Presumably, some of the volume may be accounted for by the desire for ownership of the debt of controlled roads and a certain amount resulted from passing securities uphill either for eventual public distribution or for collateral to back issues of the parent company.

5. Government and Special Agencies. Governmental and special agencies have again become an important source of funds for the railroads, following a number of years of almost purely private financing. Certain governmental units (the War Finance Corporation and the Director-General of Railroads) refunded war-time advances, and the states of Vermont and Massachusetts have advanced minor sums to the rails, but their contributions have been relatively insignificant compared to those of the three major contributors. The Railroad Credit Corporation, organized in 1931, loaned or purchased securities to the extent of 74 millions of dollars; the RFC advanced 625 millions including purchases of securities, and the Federal Emergency Administration of Public Works, 212 millions—a total of 900 millions between 1932 and 1938, largely concentrated in the years 1932–35. During this latter period, the contributions from all other sources totalled a billion dollars. The public agencies matched the investing public. To demonstrate more clearly the importance of these agencies, Table XIV has been derived from Table XIII and amplified by including the direct loans made by the RFC not reflected in security financing.

Significant also are the purchases of equipment obligations by the PWA in 1934 and 1935. In 1934, PWA advanced 75 millions; all others advanced 3 millions. In 1935, PWA advanced 28 millions; all others advanced 12 millions. The years 1931, 1932, and 1933 were characterized by an extreme dearth of equipment financing and this was a period in which not only financial depression but also outmoded methods and equipment rapidly stripped the railroads of earning power.

TABLE XIV. ADVANCES TO RAILROADS BY PUBLIC AGENCIES
(In Millions)

Sources	1932	1933	1934	1935	1936	1937	1938
RFC advances*	$284	$110	$ 53	$ 40	$ 30	$ 20	$ 88
PWA purchases of securities	—	—	160	42	11	—	—
RCC purchases of securities†	12	11	3	5	—	—	—
Total	$296	$121	$216	$ 87	$ 41	$ 20	$ 88
All other financing	$214	$225	$320	$243	$856	$443	$166

* RFC, *Report for the Fourth Quarter of 1938* (Washington, 1939), Table 6, pp. 65–6.
† In addition, the RCC made direct loans of $42 millions. ICC, *Annual Report*, 1933, p. 21.

VI. Concluding Statement

This survey of railroad financing during the post-war years has revealed the changing financial status of the industry and the resulting changes in methods and costs of acquiring capital. Behind the figures lies the dramatic story of the decline in a great public service business. What the future will hold for the rails will depend on factors far too numerous to mention here, but it is a fairly safe opinion that, although the senile period of its life cycle may not have been reached, the industry has seen its days of greatest growth and probably its greatest earnings. Following the thorough financial reorganizations which, although laggard to date, must eventually be completed, there is every reason to believe that earnings will be sufficient to support the shrunken capitalizations and even attract new junior capital. But the days of easy public financing at low rates are gone; special and governmental agencies will likely continue to provide a substantial share of needed funds; and those needed funds will be devoted to rehabilitation and technical improvement rather than to physical expansion.

Regardless of the criticisms which may be directed against the past practices of the railroad industry, the experiences of the past decade will prove of very great value in the formulation of sound financial policies. Toward this end the best efforts of an enlightened management, of an astute group of investors, and of far-seeing governmental regulation must be directed.

II. Agricultural Finance in the United States*

By HAROLD W. TORGERSON†

THE preceding installment of this article set forth the facts about agricultural financing in the United States today. In addition to a summary of the current amount and trend of farm mortgage debt, it contained a discussion of the activities of federal and private agencies making long- and short-term loans to farmers. It remains here to consider some of the current problems of American agricultural finance and some implications of recent policies.

II. Current Problems in Federal Financing of Agriculture

From the analysis in the preceding section it is clear that in the last decade federal agencies have come to occupy a position of increased importance in the field of agricultural credit until they now hold about 40% of all outstanding farm mortgages. This growth in the federal agencies has greatly increased their responsibilities, and makes the policies adopted in administering them much more important now than formerly.

One of the most important of these administrative problems is the question whether the cause of agriculture will be served better if the Farm Credit Administration has the status of an independent agency or is under the control of the Secretary of Agriculture. Two other significant problems are the questions of interest rate reductions on federal farm mortgage loans, and overcapitalization of farm credit agencies.

A. Department of Agriculture Control over the Farm Credit Administration

Prior to the reorganization of government departments in the spring of 1939 the FCA was an independent agency. When the reorganization plan was put into effect, Secretary Wallace issued a public statement that the " . . . Farm Credit Administration does not seem to be adapted to complete identification with the Department" and the Secretary of Agriculture would exercise " . . . a coordinating supervision in only the broadest and most general way." By December, 1939, however, the Secretary desired control over the Farm Credit Administration. Governor F. F. Hill resigned, and Dr. A. G. Black, director of marketing and regulatory work in the Department of Agriculture, was appointed as his successor.

Before stating the arguments pro and con the maintenance of the FCA as an independent agency, a brief statement as to the policies upon which the agencies under the FCA have been operated is pertinent. The major purpose in establishing the various agencies was to provide ample credit for farmers at low rates of interest. Federal land bank loans are now being made at 5%; federal farm mortgage loans (many second mortgages) at 5%; production credit loans at 4½%; and loans to cooperatives are written at 1½%, 2½%, and 4%, depending upon the type of loan.[40] The current rates are probably the lowest ever made available to farmers in any

* 16 *Journal of Land & Public Utility Economics* 196–206 (May, 1940). Footnotes are numbered consecutively with those in the first installment.

† Assistant Professor of Finance, Northwestern University.

[40] *Farm Credit Quarterly*, September 30, 1939 (Farm Credit Administration, Washington), p. 22. The rates quoted for federal land bank and federal farm mortgage loans are the contract rates, of which the U. S. Treasury is now paying a part.

country except through government subsidy, and they are lower than most businessmen pay for credit accommodation.

The policy of the permanent agencies of the FCA has been to make loans on a businesslike basis; i.e., in making advances the permanent agencies expected borrowers to have some investment of their own in the security offered, and limited loans to a substantial portion of the normal value of the property mortgaged. In lending on real estate, the federal land banks and the FFMC are by law restricted in the amount that they may loan. The officials of the FCA believed that a policy of lending only a major part of the value of property is, over a period of time, advantageous to agriculture because it helps farmers avoid the pitfall of too much debt. They believed that danger lurks in overliberal credits, and that they should help protect borrowers against it. If large credits are available on extremely easy terms, some farmers, as well as businessmen and others, will purchase things that they do not need and cannot afford. Later, when loaded down with debt, they will regret such transactions. The officials also believed that "soft" credit tends to push the price of land above its real worth based upon its earning power, and people who purchase farms will, as a result, find themselves burdened with debt upon which interest must be paid in order to maintain solvency. They will find it difficult to meet such payments and additional credit would not solve the problem. Experience in countries such as Denmark, where loans have been made by government-sponsored agencies over a long period of time, supports the point of view that unless a strong effort is made to keep the agencies independent and making loans on a businesslike basis, the loan policy will gradually be fused with social and political ends with the result that farm indebtedness will rise "until farmers become essentially tenants of the state."[41]

Governor Hill of the FCA released a statement, after his resignation, in which reasons were advanced why the FCA should be continued as an independent agency.[42] He believed, first, that the federal farm credit system cannot be maintained on a sound basis if it becomes an integral part of the Department of Agriculture, which is responsible for the administration of programs providing for millions of dollars in direct benefit payments and grants to farmers annually. With some agencies making benefit payments and grants and lending more than the market value of commodities, he believed that it would be very difficult for another agency of the Department to insist upon repayment of borrowed funds. He called attention to the $130,000,000 investment that farmers have in present agencies and the need to safeguard these funds. In the opinion of Governor Hill, if the agencies of the FCA lost their independence, it would be quite likely that over a period of time they would cease to be self-supporting and able to float their non-guaranteed securities in the public markets at low rates of interest. He thought it likely that a government guaranty of these securities would be found necessary, and called attention to the fiscal implications that would result from assumption of such guarantees by the Government. Moreover, with the disappearance of a self-supporting system, farmers would be

[41] E. C. Young, "Farm Credit and Government," 20 *Journal of Farm Economics* 567 (August, 1938); see also *Foreign Agriculture* (USDA, February, 1937), p. 59, and February, 1938, p. 99. Also see the report rendered by the Financial Committee of the League of Nations entitled "Agricultural Credit, Medium-Term Credit to Industry" (Geneva, 1939), pp. 9–10.

[42] For the full statement see the *Washington Post*, December 21, 1939, p. 2.

exposed to a change in attitude toward farm credit by future administrations.

Another point advanced by Governor Hill was that no substantial savings to the Government would result from a closer integration of the FCA with the Department of Agriculture. Lastly, he pointed to the considerable progress that had been made. Low interest rates are in effect. The foreclosures per 100 farms in 1938 were only about ⅓ of the rate during 1932, and were less than for any year since 1926. As evidence that the FCA has been sympathetic in cases of delinquencies, he cited that foreclosures per 1,000 farms mortgaged had, during the period 1934–38, been less than ½ the rate for private lenders.

Secretary Wallace also issued a public statement at the same time.[43] He stated that, since he was charged with the responsibility for the affairs of the FCA, he wished to place himself in a position to discharge his responsibilities for handling problems brought to him for consideration. In his own words: "My function as Secretary of Agriculture is to act as coordinator for the President in tying the FCA in with the rest of the agricultural work, and thus keep all these public services to agriculture moving forward toward common objectives." He said, however, that the change in administrators involved no change in administrative policy of the particular agencies.

Secretary Wallace did not give any details on what he meant by "tying the FCA in with the rest of the agricultural work and thus keeping all these public services to agriculture moving toward common objectives." Dr. Black said on February 24, 1940, however, that "the FCA is taking the broad social view."[44] The press dispatch also stated that "strict banking procedure will be abandoned for extreme leniency in cases where farmer borrowers are deemed to have a chance eventually of meeting their obligations."[45] It also stated that "the FCA would not require its borrowers to comply with Agricultural Department crop control programs but would suggest that they take part in them." The resignations of three top-ranking officials in February and March, 1940, indicate that these changes in credit policy are being put into effect.

The opposing points of view on what should be the future position and policies of the FCA appear to be represented in two bills both of which were introduced in the Senate on March 4, 1940. S. 3480, sponsored by Senators Gillette, Hatch, Miller, Mead, and Truman, provides for a restoration of the independent status of FCA. Letters and resolutions from the American Farm Bureau Federation, The National Grange, the National Council of Farmer Cooperatives, the National Wool Growers' Association, and the American National Livestock Association in support of this position were inserted in the *Congressional Record* at the time this bill was introduced.[46] S. 3509, sponsored by Senators Wheeler, Bankhead, and La Follette, provides for elimination of ownership of capital stock by borrowers, a more lenient foreclosure policy, a reduction under certain conditions in debts to the federal land banks and the FFMC, and a guaranty of federal land bank obligations by the Government.[47] The major features of

[43] *Loc. cit.*

[44] *Washington Post*, February 25, 1940, p. 2.

[45] A strict banking policy has not been followed by the FCA. Under Governor Hill special forbearance agreements providing for variable payments or suspended payments were put into effect where borrowers were having difficulty meeting their obligations. See the 1939 *Annual Report*, Farm Credit Administration (mimeographed edition), pp. 33 ff.

[46] March 4, 1940, pp. 3476–7.

[47] An identical bill (H. R. 8748) was introduced in the House of Representatives by Representative Jones.

this bill were approved by Secretary Wallace in a statement on March 26, 1940.

The fundamental question at issue in these bills and in the controversy might be stated as follows: Are the farm credit agencies of sufficient importance so that it is in the long-run interest of agriculture to assure their more likely successful operation by giving the FCA an independent status, or is it in the long-run interest of agriculture that the activities of the FCA be tied in more closely with the various crop control and rehabilitation programs of the Department of Agriculture? Advocates of independence for FCA believe that the continuance of the farm credit agencies is an important primary objective and they feel that the future of these institutions would be jeopardized if they are used as an adjunct in effecting policies of the Department of Agriculture which may not be of a permanent nature.[48] Opponents of this point of view lay greater stress on the importance of near-term and social objectives. They approve of the farm credit agencies, but think that their use as auxiliaries in effecting the policies of the Department of Agriculture does not materially endanger their continuance.

B. Reduction by Congress in Interest Rates on Farm Mortgage Loans Made by Federal Agencies

Another problem of long-range significance concerns reductions in interest rates. Several bills are now pending before Congress to reduce the rates of interest on mortgage loans made through the federal land banks and the FFMC (Land Bank Commissioner loans). The original legislation of this kind was made in 1933 when the rate charged borrowers on federal land bank loans was reduced to 4½%. In 1935, Congress reduced this rate to 3½% for a one-year period, but this has been extended several times, even over presidential veto, and is now in effect to June 30, 1942.[48a] The rate charged farmers on loans made by the FFMC is now 3½% until the same date. Congress has directed the Secretary of the Treasury to pay quarterly to the federal land banks and the FFMC an amount equal to the interest reductions granted, and thus these agencies are not adversely affected by the reductions in interest rates charged borrowers. For the year 1939 the Treasury, in accordance with this law, paid or owed $29,175,000 to the federal land banks and $7,340,000 to the FFMC.[49] The sum of such payments made or to be made for the period 1933 to the close of 1939 was $184,889,000.

As stated in a previous paragraph, only about ⅓ of the total number of farms in this country are mortgaged, and the federal agencies are holding only about 40% of the total farm mortgage debt. When reductions are made in the rates of interest charged by the federal land banks and the FFMC, only 13% of land owners are directly benefited.[50]

[48] The history of state-owned farm loan agencies indicates that there is no assurance that a government which starts a farm mortgage institution will continue operating it. Three agricultural states (Minnesota, South Dakota, and North Dakota) established rural credit agencies during the 20's. Heavy losses were suffered, and extension of new loans has been discontinued in all three cases. For a discussion of the experience of one of these agencies see Gilbert W. Cooke, "The North Dakota Rural Credit System," 14 *Journal of Land & Public Utility Economics* 273–83 (August, 1938).

[48a] Pub. Law No. 672 extending the interest reduction period to June 30, 1942 was signed June 29, 1940, after the first installment of this article appeared. This Act also decreased the effective interest rate of FFMC loans from 4% to 3½% for the period from July 1, 1940 to July 1, 1942.

[49] 1939 *Annual Report*, Farm Credit Administration, Appendix, Tables 19 and 57.

[50] See the statement of A. S. Goss, former Land Bank Commissioner, FCA, before the House Committee on

(*Footnote 50 continued on page 322*)

Table V summarizes the volume of federal land bank loans outstanding at various rates of interest as of December 31, 1938. All FFMC loans are written at 5%.

TABLE V. FEDERAL LAND BANK LOANS OUTSTANDING AS OF DECEMBER 31, 1938 CLASSIFIED BY RATES OF INTEREST*

Rate	Amount
4%	$ 277,058,000
4¼	57,103,000
4½	12,871,000
4¾	1,320,000
5	1,007,448,000
5¼	44,275,000
5½	506,402,000
5¾	56,000
6	74,902,000
6½	789,000
Total	$1,982,224,000

* Data furnished by Farm Credit Administration.

From this table it may be seen that a few of the present loans were written at a rate of 6½%. There is a considerable volume at 6% and a very large volume of loans written at 5½% and 5%. At the time that these loans were made, the federal land banks were paying 1% less than the rates mentioned on the bonds that they sold to the public. It is obvious that the banks must have a margin between the cost of funds and the rates at which loans are made.

There is an opportunity, however, for federal land banks to effect a reduction in the rate paid on their bonds and, if they did so, they could permanently reduce the interest rate on the loans which are of highest cost to farmers. As of December 31, 1939 the federal land banks had outstanding $877,218,000 of 4% bonds. The long-term 3% bonds that the federal land banks have outstanding are selling at a premium in the market and more could be sold readily. It happens that about $743,757,000 of the 4% bonds, according to the latest data available, are being held by the FFMC, the production credit corporations, and the production credit associations, all of which are under the FCA.[51] As far as the production credit corporations and associations are concerned, the money that was used to purchase these bonds was directly or indirectly furnished by the Federal Treasury. The cost of funds to the FFMC is slightly less than 3%. There seems to be no good reason why one agency in the FCA should be paying 4% on bonds sold to sister agencies when the first agency could sell bonds in the open market at a yield of 3% or less.[52]

If the Farm Credit Administration directed the FFMC and the production credit corporations and associations to accept payment or accept new 3% bonds in place of the 4% issues, the federal land banks would be saved approximately $7,400,000 annually. In view of this reduction and the help that Congress has given the federal land banks

(*Footnote 50 continued from page 321*)

Agriculture, *Congressional Record*, March 25, 1940, pp. 5183–8. For data on total farm mortgage debt of each state see *Agricultural Finance Review*, November, 1939, p. 92, and for data on amount of farm mortgage loans in each state held by federal land banks and the Federal Farm Mortgage Corporation see the 1938 *Annual Report*, Farm Credit Administration, pp. 125 and 174.

[51] *Report and Financial Statements Submitted by the Secretary of the Treasury to the Senate of the U. S. Pursuant to Senate Resolution 150 of June 22, 1939* (Byrd Report), Vol. 18, Part I, p. 25; Vol. 20, Part I, p. 60.

[52] Against this point of view may be mentioned the fact that federal land bank obligations were selling in the market at about a 4% yield when the bonds were sold to the FFMC, and a reduction to a 3% interest rate on the bonds would reduce the income of the latter corporation by over $6,000,000 annually. The FFMC, in which the U. S. Treasury is the sole stockholder, is charging off considerable losses on loans and showed a net loss for 1939. It is the belief of the writer, however, that it is desirable policy for the losses suffered from loans on second mortgages (up to 75% of the normal value of property) to be more discernible in the FFMC accounts, and not to be offset in part by profits on an investment in federal land bank obligations.

in past years, the latter might, at a current cost of about $11,500,000, put into effect a maximum rate of 4½% on its mortgages. The net reduction in the income of the federal land banks would thus be about $4,100,000; and as the federal land banks had earnings of almost $12,600,000 in 1939, after making liberal deductions for losses on real estate and adjustments of reserves, it appears that such a net reduction would not be embarrassing. A permanent reduction in the rate for debtors who are burdened with the high cost mortgage loans might thus replace the temporary reductions now granted to federal land bank borrowers. The contract rate of 5% on federal farm mortgage loans does not seem excessive when it is realized that 63% of these loans are second mortgages.[53]

The problem of interest rates, and also of the independence of the Farm Credit Administration, has other implications which should be mentioned at least, even if they cannot be discussed fully at this point. In years past farmers have depended, and still depend, upon commercial banks, savings banks, insurance companies, estates, and trusts as sources for a considerable volume of short- and long-term funds. For a number of these sources, particularly those with a smaller volume of assets, the income from agricultural loans comprises an important source of revenue. As long as federal agencies make loans on a semi-conservative basis, and interest rates are not, at public expense, made too low, private institutions can still compete and continue operations. But if loans by federal agencies are made for an increasing proportion of the market value of farm property, and interest rates are driven down to levels at which private agencies cannot compete, then private institutions will be driven from the field.

C. Government Investment in Farm Credit Agencies

The last problem to be mentioned concerns the size of the investment made by the Government in several of the agencies of the FCA. In his message transmitting the 1941 budget, President Roosevelt indicated that the capital stock of various federal credit corporations was to be reduced $700,000,000.[54] Of this amount it is reported that $385,000,000 is to be withdrawn from farm credit agencies.[55]

In certain of the corporations, particularly the banks for cooperatives, the investment made by the Government seems excessive in view of the amount of business being done. The volume of loans made by the banks for cooperatives did not develop as expected, and these banks could well finance their operations if a substantial reduction were made in the Treasury's $149,000,000 investment in their capital stock. At the close of both 1937 and 1938 these banks had $87,000,000 of loans outstanding, and on December 31, 1939 the total was $76,000,000. From the point of view of financing loans, the investment of the Government in the federal intermediate credit banks and in the production credit corporations could also be reduced.

The effect of a reduction in the capital stock upon the incomes of these corporations should also be mentioned. To get funds to retire a part of their stock, some of the corporations will have to liquidate investments, and others will have

[53] Farm Credit officials are reported as saying that farmers in the country are as a group making more rapid progress in paying off farm mortgage debts than at any time in the history of the farm loan system. (See *The Commercial and Financial Chronicle*, January 6, 1940, p. 51.)

[54] *The Budget of the United States Government for the Fiscal Year ending June 30, 1941*, p. xii.

[55] *Congressional Record*, March 20, 1940, p. 4827.

to increase the amount of borrowed funds. The effect will be to reduce the net incomes of the agencies. This may not work a hardship upon some of the corporations as the earnings reported have been more than adequate, but in other cases losses may result.

Concluding Statement

The Jones-Wheeler Bill and the Gillette Bill embody the major opposing points of view relative to the future policies of the Farm Credit Administration. If the former should be enacted and approved, it would be a step toward a policy of more liberal administration of farm credit, with the danger that the Government will become the owner of considerably more agricultural real estate and suffer greater financial losses than are otherwise likely. Moreover, it would probably not be long before pressure would be exerted for more indulgent administration of credit agencies in other fields, particularly in housing. If the Gillette Bill should be passed and approved, losses to the Government would be held to the minimum possible under a lenient collection policy, and there would be less likelihood that the disastrous record of the rural credit agencies of Minnesota, North Dakota, and South Dakota would be repeated by the federal farm mortgage institutions.

Origin and Development of a Continuous Real Property Inventory

By HOWARD WHIPPLE GREEN*

CLEVELAND is the parent city of the Real Property Inventory. Early in the depression the National Conference on Construction, sponsored by the Chamber of Commerce of the United States and the United States Department of Commerce, provided the birthplace. The purpose of the National Conference was to consider the problems of the construction industry.

Committee No. 1 under the chairmanship of S. L. Andrew, Chief Statistician of the American Telephone and Telegraph Company, faced with the problem of developing a method of measuring the demand and supply of family units, commercial and industrial space, and public property, provided for a committee with the writer as chairman. This committee had the assistance of the Department of Commerce. The report of this committee provided the pattern from which the Real Property Inventory was fashioned.

Committee No. 3 of the Conference faced, among other things, the problem of studying mortgage finance and its relation to real property, its creation, development, and use. Raymond T. Cragin of Cleveland was chairman of the subcommittee to which this problem was referred.

The final reports of these two committes relating to real estate, as defined in its broadest sense, took the Conference by storm. Because of the vast amount of statistical data already available by census tracts and because both committee chairmen lived in Cleveland, the sponsoring organizations chose Cleveland as the city in which the ideas incorporated in these two committee reports should be tried out. Raymond T. Cragin became chairman of the Cleveland Committee and the writer became the director. Mr. Cragin, who had been interested for a number of years in such an undertaking, was instrumental in forming a non-profit corporation and was responsible for interesting banks, public utilities, newspapers, and other business concerns in financing the work.

* Director, Real Property Inventory of Metropolitan Cleveland, Incorporated.

First Real Property Inventory

The first report, published in the spring of 1933, is said to have had more effect on Cleveland's recovery than any other single endeavor. Presenting the facts relative to the community was sufficient to stabilize business judgment.

Instead of finding that some 250,000 persons had left Cleveland, as was common talk, the facts showed a slight increase in the number of families when extra families were added to occupied family units. Instead of finding an enormous oversupply of family-units, a 9% vacancy was reported. Even though the vacancy ran as high as 22% in apartment houses, it was as low as 4% in one-family dwellings. A total of 12,635 families was found doubled up with other families, which, when conditions improved, would require separate family units, houses, or apartments, and would reduce the vacancy to less than 5%, a percentage ordinarily considered as quite normal.

The facts about the creation of new lots by subdivision activities over a period of years were presented. The

number of family units created and the number demolished were reported. The number of foreclosures for a five-year period showed a totally different picture from what had been imagined even by students of this subject. It was true that the total number of properties foreclosed and sold by the sheriff had increased rapidly from 1926 to 1930 and then had decreased, but not until these data were analyzed by type of property was it learned that the foreclosure of one-family dwellings continued to increase until 1932. Nor had it been realized that the big increase in total properties foreclosed between 1926 and 1930, and especially between 1929 and 1930, was caused by the foreclosure of vacant sublots and acreage, the loss of which to the urban owner was quite different from the loss of his home.

One large Cleveland organization is said to have profited to a very large extent in one year through careful study of the data presented and an official of a large financial institution has indicated that thousands of families kept their houses that might have been lost through foreclosure in 1933 had actual conditions not been so clearly presented in this report. Instead of foreclosing every property delinquent on payments of principal and interest, a much more liberal policy was adopted by this financial institution and followed by all the others.

Cleveland Real Property Inventory Used as Model

The Real Property Inventory created first in Cleveland in October, 1932 became the basis for the many so-called real property inventories made during the past eight years. In the fall of 1933, the Civil Works Administration, recognizing the value of this original work, sent a form letter to all city plan commissions in the United States stating that real property inventories were among the projects upon which CWA people might be employed. Early in December, 1933 the Bureau of Foreign and Domestic Commerce obtained a special federal grant of $2,500,000 for so-called "Real Property Inventories" in 64 cities and metropolitan districts distributed throughout the United States.

The writer was attached to the Bureau of Foreign and Domestic Commerce as consultant and drew up the forms, wrote the manual of instructions, and gave the verbal instructions to key persons in the Bureau of the Census. He directed the work in Cleveland, and with 700 men and women an enormous amount of data was collected. These data accurately recorded, carefully analyzed, and intelligently interpreted became of vital importance to every concern doing business in Cleveland. They became significant to every person living in the Cleveland Metropolitan District and to business concerns with headquarters in other places doing business here.

This expansion of one phase of the original Cleveland Real Property Inventory[1] included data of enormous sig-

[1] "Housing Figures for Cleveland, Ohio" issued on September 15, 1934, by the Bureau of Foreign and Domestic Commerce, stated in part:

"The Bureau of Foreign and Domestic Commerce conducted the field work in Cleveland with the aid and cooperation of Raymond T. Cragin and the Cleveland Real Property Inventory Committee. Cleveland, in fact, served as the field laboratory for the entire project.

"The Federal real property inventory was indeed based in large part upon the Cleveland inventory taken a year or two previous, the only difference between the two projects being that the Federal survey was limited to residential property whereas the Ohio city project covered all types of buildings. The Federal survey, however, covered the residential property in much greater detail than the original Cleveland survey. The Bureau was also fortunate in having the services of Howard Whipple Green, of Cleveland, who has been called the father of the real property inventory as chief consultant for the Federal project."

nificance to a broad group of users. It supplied data for answering such ever perplexing questions as: What is the market for mechanical refrigeration, for gas and electric ranges, gas and oil heating, sanitary facilities, paint, transportation, automobiles, gasoline, seeds and shrubs? Where should chain and independent stores, factories, and industrial plants locate? What is the future of this or that location? What is the need for this or that service, or the desire for this or that activity?

The data relating to each building containing family units and the data relating to each individual family unit, whether occupied or vacant, were recorded for the entire Cleveland Metropolitan District and for 63 other urban areas in the United States.

Each dwelling was placed in one of 11 classes. All stores and industrial plants were listed and the vacant lots noted. The principal material of construction was recorded. The height of the dwelling in stories, whether the structure had a basement, the age of the building, the number of elevators, and the condition of the structures were also noted. The presence or absence of garages and their car capacity were recorded.

In the case of each family unit, the type of heating apparatus and the fuel were recorded. The presence or absence of running hot or cold water and of mechanical refrigeration was noted. The tenure of all family units and the length of time occupied or vacant were matters of record. The number of rooms and the number of persons living in these rooms, the number of extra families doubled up with other families, and the race of each family were noted. The number of water closets, bath tubs, and built-in shower baths, as well as the number of automobiles, was recorded. The use of gas and electricity for cooking and lighting and the length of time it takes the principal wage-earner to get to work, and the usual mode of transportation were tabulated. The family's inclination to "farm" was also noted. The value of owned homes and the monthly rental of rented homes in January, 1934 became available in a form comparable to data obtained by the Bureau of the Census in April, 1930, and the equivalent monthly rental was again determined for each census tract.

One hundred and forty other cities in the United States used the forms and manual of instructions and made these so-called "Real Property Inventories" in 1934. New York, Philadelphia, Boston, Buffalo, Pittsburgh, and other important centers were included in this group.

The assistant director of the Federal Housing Administration, whose headquarters were located in Cleveland, always claimed that the Cleveland Real Property Inventory was largely responsible for the creation of the Federal Housing Administration. During the past few years the Federal Housing Administration, WPA, and other governmental agencies modified the Cleveland Real Property Inventory into the Real Property Survey,[2] and such surveys have

[2] "Real Property Inventories" and "Real Property Surveys" are quite similar and, although both were based on the technique developed in Cleveland, they differ from the Cleveland Real Property Inventory as follows: (a) They are one-time (two-time at most) surveys rather than continuous inventories; (b) They include very detailed data relative to dwellings, their use, occupancy, condition, and so forth; (c) They usually produce detailed tabulations for entire communities rather than simpler tabulations for each of the small sections or census tracts into which the larger cities of the United States are subdivided. If they produce simple tabulations by blocks, as the Real Property Survey standard technique dictates, such data are not published for broad distribution; (d) They omit detailed consideration of other structures and other real property; (e) They omit from consideration all other related facts such as data on new construction, demolitions, subdivision activities, foreclosures, population changes, business conditions, and taxation.

been made in more than 150 cities in this country.

Such a Real Property Survey is now being made in Cleveland and Cuyahoga County under the direction of the Real Property Inventory of Metropolitan Cleveland of which the writer is the director. The field work was completed on January 15, 1940, and the tabulations will be completed within a few months.[3]

The Bureau of the Census modified the Cleveland Real Property Inventory again as the Housing Census part of the Sixteenth Decennial Census of the United States, and this modified technique has been applied in every city, village, township, and county in the United States in 1940.

The Cleveland Criteria

Many of these so-called Real Property Inventories, the Real Property Surveys, and the Housing Census, although much more complete and detailed in certain respects than the original[4] Cleveland Real Property Inventory, fail to meet several of the criteria set up originally in Cleveland and followed throughout the past eight years.

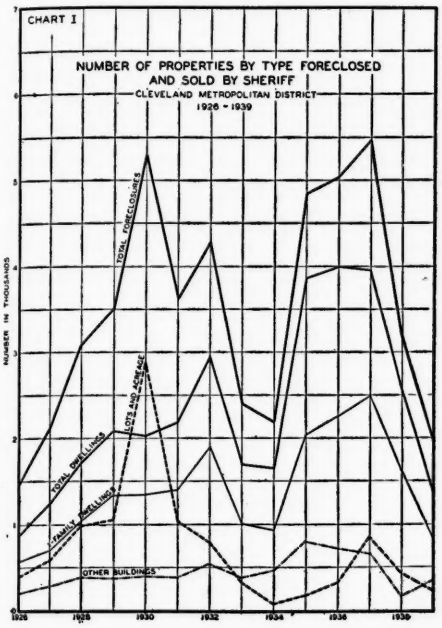
1. The Cleveland objective is to cover the entire community rather than the central city alone. Most, if not all, of the early occupancy-vacancy surveys were confined to central cities, whereas the demand and supply of family units in entire communities rather than central cities are the vital factors to be determined.

2. In Cleveland the data are also provided for each small, geographically constant area or census tract, rather than only for entire cities and villages. Data relating to occupancy-vacancy, new construction and demolitions, mortgage finance, and so forth for each small section of a community are much more vital than for the community in its entirety. The modification of the original Cleveland Real Property Inventory by the Bureau of Foreign and Domestic Commerce, for example, was tabulated for metropolitan districts and central cities rather than by census tracts or smaller areas within the community. It is of little help to know that 10% of the families are without tubs or shower baths somewhere within a metropolitan district or even somewhere within a large city but, when the geographical distribution of these bathtubless families is known, the information immediately becomes vital to those concerned with living conditions in the community.

3. The objective in Cleveland is to publish the data by types of property rather than only as totals for dwellings and other buildings. To know how many properties are foreclosed and sold by the sheriff within a community is of little practical value even if the data are collected each year for a period of years. To know how many of these foreclosures are single-family dwellings and how many are vacant lots is much more valuable (see Chart I). To know that during a 10-year period there were 37 apartment-house foreclosures per 100 apartment

[3] Real Property Inventory of Metropolitan Cleveland, Incorporated, analyzed and published, by census tracts, the Cleveland Metropolitan District data collected in January, 1934 by the "Real Property Inventory" of the Bureau of Foreign and Domestic Commerce, Cleveland being one of the 64 cities. The Cuyahoga County data collected by the Real Property Survey of January, 1940 are being analyzed by census tracts and will be published in a similar form making possible: (a) comparisons of these very detailed data relating to each census tract in Greater Cleveland; and (b) analyses of the changes taking place during this six-year period.

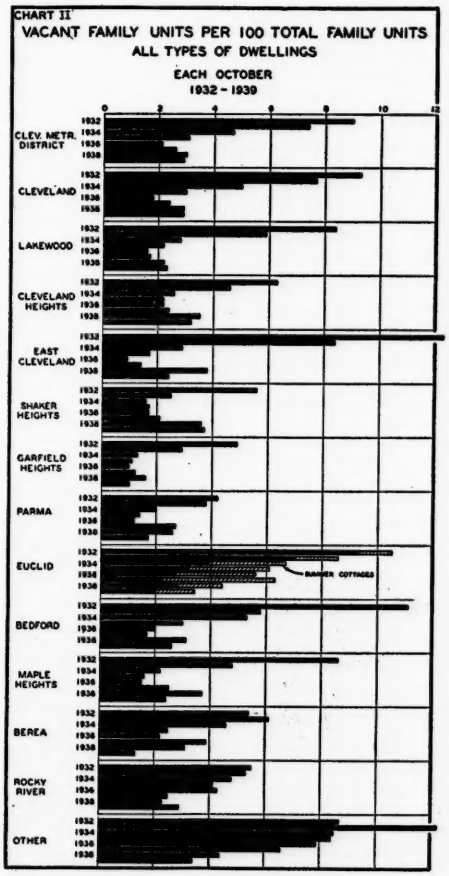
[4] "Original" refers to the fact that the technique and even the term "Real Property Inventory" originated in Cleveland. This term Real Property Inventory has been used loosely by others since 1932. The various CWA and WPA jobs, called Real Property Inventories, in reality included only certain parts of the original technique as developed in Cleveland, although these certain parts of the Cleveland-developed technique have been greatly expanded.



houses compared with 10 per 100 one-family dwellings gives information which may be used to the advantage of many groups within the community. To know in what parts of a community large percentages of certain classes of property are foreclosed is of value to home owners as well as to lending agencies: to the one it is an indication of the trends of different neighborhoods and to the other it is an aid in evaluating mortgage risk.

4. Such an investigation must be continuous and record trends rather than determine factors for which no basis of evaluation exists. Ninety-nine and a fraction per cent of all CWA and WPA Real Property Surveys have been one-time jobs. Although most inclusive, without comparative data for other years, it is difficult to judge whether any specific ratio is high, low, or normal (see Chart II). For example, is a 20% vacancy in family units in large apartment houses high, does such a vacancy ratio indicate that no new apartment houses should be built, or is this a temporary condition which will correct itself during a period of a few years and should new construction be undertaken?

5. Its object is to include an enumeration of dwellings and family units, occupied and vacant; other buildings by type; use of land; and related data such as the creation of sub-lots, the construction and demolition of buildings, mortgage-finance data, and so forth. Presentation of only part of the factors relating to the supply and demand of family units, com-



mercial and industrial structures, and so forth may frequently be misleading to those prepared to use the data to improve conditions within the community. The presentation of comparable data from year to year arranged in such form as to make trends easily seen is vital to the full use of such factual data as have been described above.

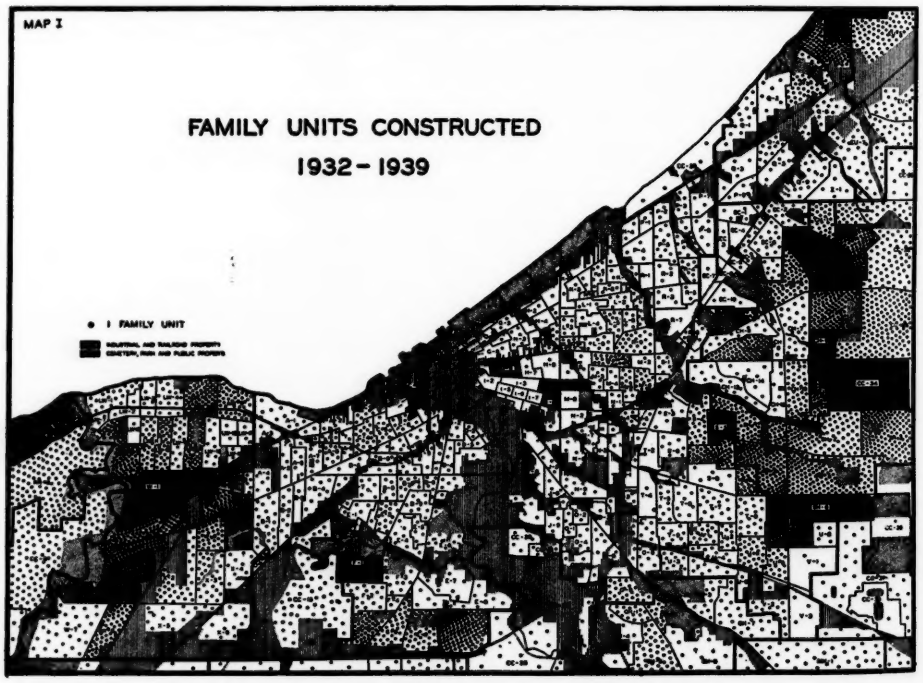
6. It must present data comparable from year to year.

Extent of Data Presented in Cleveland's Annual Reports

The Real Property Inventory as created in Cleveland includes, besides occupancy-vacancy data by type of dwellings and non-residential property by census tract, similarly detailed analyses of the multitude of factors causing variations in the demand and supply of family units, commercial, industrial, and public properties.

1. For each census tract in the Cleveland Metropolitan District and in Cuyahoga County, of which there are 347, the Real Property Inventory of Metropolitan Cleveland annually determines the number of dwellings by type, the number of family units in these dwellings, and the number occupied and vacant. This work has been done in each of the past eight Octobers.

Variations in vacancy ratios are caused by a number of factors such as: (a) increase in dwelling units arising from new construction (Map I) and remodeling to change capacity; (b) decrease in dwelling units caused by demolitions (Map II); (c) decrease in demand for dwelling units caused by families doubling up, families disintegrating because of deaths



or divorces, and families moving out of the area;[5] and (d) increase in demand for dwelling units caused by families undoubling, new families being created by marriage, improved economic condition, families increasing in size caused by births, as well as families moving into the area.[6]

Because this matter of occupancy-vacancy is so complex, other related data are of necessity included in the Cleveland Real Property Inventory.

2. The number of non-residential buildings used for light manufacturing and for industry, schools, churches, public buildings, and a dozen other purposes are all tabulated in the Inventory Reports.

3. The number of stores by type in each locality and the number of vacant store units are published for each of the 347 census tracts.

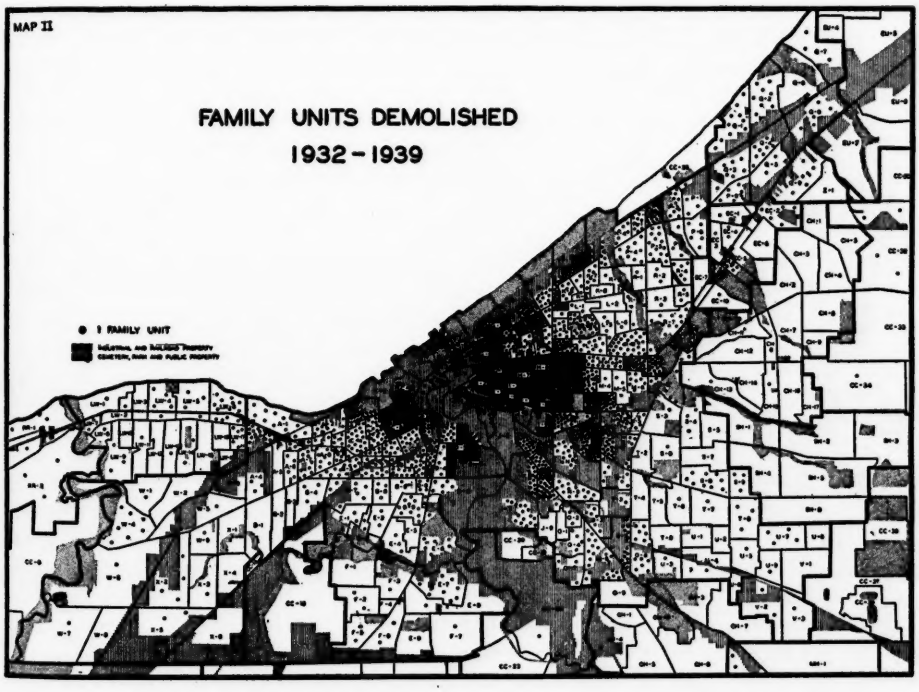
4. Office buildings have been studied in detail, and square feet of floor space, office units, elevators, employees, and so forth have been listed.

5. Daytime population of downtown Cleveland was presented in 1938.

6. Industrial property, occupied and vacant, and square feet of floor space,

[5] For example, in 1938 the 3,270 families that moved away from the Cleveland Metropolitan District went largely (2,084) to other parts of Ohio and to adjoining states, although some went to the eastern seaboard (New York, 159; Massachusetts, 30; Connecticut, 17; New Jersey, 38) and a sizable number to Florida (99) and California (55).

[6] For example, in 1938 the majority of the 3,729 families entering the Cleveland Metropolitan District came (1,972) from other parts of Ohio and from adjoining states, together with others from Massachusetts (47), Connecticut (16), New York (295), New Jersey (60), and Illinois (196), plus a fair number from Florida (46) and California (50).



occupied and vacant, have been published for two years.

7. As soon as the calendar year ends, the number of family units and nonresidential buildings created by new construction and by remodeling to change capacity are determined, as well as the number demolished and the family units involved. These data for each of the 20 years, 1920–39, are published.

8. The properties foreclosed and sold by the sheriff during the year by type of property and location are shown in tabular form for each year starting with 1926.

9. Data on mortgage finance, deeds filed, mortgages filed and cancelled, by number and dollar-volume have been presented for each month starting with 1910. Mortgages by source of funds are shown each year since 1929.

10. The number of sub-lots or building lots recorded each year from the 220 put on record in 1802 is being put in shape for publication by census tract and year recorded. Thus, the development of this community may be better understood. The older areas are differentiated from the newer.

With data of this character many of the phenomena observed in Greater Cleveland may be more easily understood. For example, why does the small area of Lakewood near the National Carbon plant have those characteristics that are so well recognized? Why is the Tremont area worthy of concentrated study by public and private organizations? Why is the Woodland-East 55th Street section of our community largely inhabited by Negroes? What additional areas will, in the future, be Negro areas? Such questions as these are vital to the welfare of this community and to many of those transacting business here. Much light is thrown upon such perplexing problems as these by the study of the sub-lots created during the past 138 years. The future of each section within a large metropolitan community is determined many years before its abnormal conditions are recognized by even the careful observer.

11. The number of sub-lots remaining vacant in each census tract at the end of each year is shown by use for which zoned. As would be expected, the picture for 1939 shows that for the most part the highest percentage of vacant lots is near the edge of the Cleveland Metropolitan District. However, in a few instances relatively more built-up areas lie beyond the areas of high vacancy. Consequently, the closer-in sections having many vacant sites should be carefully watched lest they develop blight and become obstacles to the orderly development of the metropolitan district.

12. The measurement of 131 miles of street frontage on the 17 principal thoroughfares has been made during the early spring each year since 1934. The use of street frontage by type of store for commercial and industrial purposes, the number of residences located on the street, and the number of lots vacant are tabulated street by street.

13. The shopping centers on these thoroughfares and the other shopping centers distributed throughout Greater Cleveland were tabulated first in 1939. The number of each type of retail outlet was shown together with the feet of frontage used by type of outlet. A map showing the location of more than 250 such business centers has been published. In some of these centers a great deal of business is transacted; in others, there are only a few stores and little business. The tabulation of street frontage in this form will, over the years, indicate those business centers which are declining in importance and those which are developing and increasing in importance. These data are vital to the business of this community.

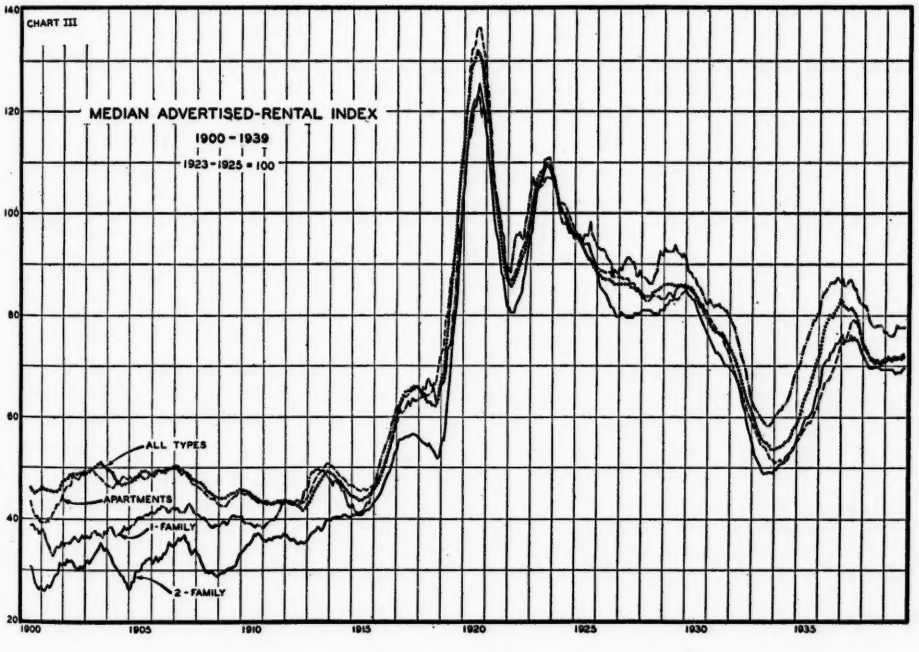
14. A section called the Cleveland

Market Data Handbook, including all available business indexes pertinent to this community, was first published in 1937. Most of these data are routinely collected by other agencies. Credit is given those who collect them. Some series of figures have been created especially for this section, including indexes of the advertised rentals of one-family dwellings, two-family dwellings, and suites in apartment houses (Chart III), the assets and liabilities of savings and loan associations, and other facts vital to the business of this community.

15. A study of the movements of families throughout the Cleveland Metropolitan District has been published each year since 1933. Where do the 80,000 families moving within this community go, what sections do they leave, how does their moving affect the sections which they leave and the sections in which they settle?

Cleveland's Inventory Organized as a Continuous Enterprise

The Cleveland group feels that the inventory must be continuous and must provide trends rather than measure conditions as of a specific date. The Real Property Inventory of Metropolitan Cleveland, incorporated as a non-profit organization, has already published more than 3,800 pages of basic data. These data are much more extensive than it was believed possible to collect and assemble in so short a period of years. This more extensive job has been made possible through the aid of various relief projects—CWA, FERA, and WPA. The persons assigned by the Work Projects Administration are constantly under the close supervision and guidance of the technical staff of the Inventory and are making available a great deal more basic data of importance to this community than could be produced by the relatively



small staff attached to the Inventory Office. These basic data may be kept current with the regular staff operating on a $25,000-a-year budget with annual publications exceeding 400 pages.

This figure is, of course, largely conjectural. Up to this time the work has been carried on with the cooperation of the Post Office Department whose letter carriers have gathered the occupancy-vacancy data; with personnel supplied through various federal works programs; and with a supervisory staff which has devoted only part of its time to the inventory project. Similarly, the financial support has come from various sources, including private sponsors, public funds, and sale of publications.[7] Obviously, a sizable portion of these funds has been expended simply for the materials and space required to keep the large personnel functioning. Consequently, some experience under more normal conditions would be required before a very accurate statement could be made as to the costs and personnel necessary to maintain the inventory on a permanent basis at its present level.

The Real Property Inventory of Metropolitan Cleveland publishes two volumes each year (400 pages in 1939). For example, during the past year, the following parts of Reports 12 and 13 were issued:

December, 1938	Occupancy-Vacancy of Dwellings and Non-Residential Buildings by Type and Census Tract
February, 1939	Sub-lots, New Construction, Demolitions, and Foreclosures by Type of Property and Census Tract
May, 1939	Street Frontage
June, 1939	Shopping Centers
July, 1939	Market Data Handbook
August, 1939	Movements of Families
September, 1939	Morgage Finance

Each of these parts is inserted in the subscriber's two-inch looseleaf binders as published and mailed to those with standing orders for insertion in their binders. After the report is complete, copies bound in buckram become available for convenient reference, the looseleaf binders making the pages as published available for current uses.

The Real Property Inventory reports cannot be considered a time table by which the time of arrival or departure may be ascertained, although they may appear to the casual observer to resemble a mammoth time table with all its figures. The Real Property Inventory is not a dictionary to be consulted for the definition of a word or phrase, although the reports fill 16 inches of a library shelf. The Real Property Inventory is more an encyclopedia to be consulted upon any subject pertaining to characteristics and conditions in the community. A study of its pages gives the reader a background upon which to base his own judgment. Disjoined facts are not of much assistance as a basis for judgment. What the characteristics of this particular area may be at this particular time are almost useless unless related to the characteristics of other areas at this time and of both this area and other areas in previous times. Study, frequently years of study, is required to insure a broad, well rounded basis for sound judgment.

[7] Since October, 1932, a total of $132,000 has been furnished by subscribers, banks, public utilities, newspapers, and county government and the sale of publications and more than $700,000 of government relief funds has been made available for personnel only.

The Public Corporation as a Regulatory Device

By D. F. PEGRUM*

Introduction

THE twenty years that have passed since the World War ended have seen the complete abandonment, practically speaking, of the philosophy of laissez-faire. Its place has been taken by government intervention, in varying degrees, in nearly all phases of economic activity. Those countries in which popular government is still held as the highest political ideal are trying to find that middle ground which will reconcile the problems arising from present-day, large-scale enterprise and modern technology with democracy. As a consequence, they are proceeding by a policy of gradualness that has no structural or ideological goal and will lead to no predetermined end. Solutions develop out of specific situations and the configurations that will result can be but dimly perceived at best. Out of such an approach has arisen the public corporation in Great Britain. It is a device for the control and direction of certain types of industries, peculiarly fitted to centralized direction, unsatisfactorily conducted by unregulated private management, yet suffering from disadvantages when management is subject to direct political interference and supervision.

The Problem of Regulation

The industrial structure of the modern western world, at least under capitalism, embraces three main types of enterprises: (1) those which are naturally competitive; (2) those which are naturally monopolistic; (3) those which are partially competitive and partially monopolistic—that is, they combine many of the characteristics of the other two. The second group is composed of those enterprises ordinarily designated as public utilities, although railroads, which fall in the category of natural monopolies, are faced with such direct competition in many respects that there is difficulty in adjusting them to the pattern to which they belong.

A natural monopoly in economics is one that arises out of the economic characteristics of its production processes, not out of its legal rights. The latter are a derivative of the former. A natural monopoly is one in which production and consumption are concomitant,[1] and investment is necessarily so large in proportion to income that direct competition in all phases of pricing is impossible. The electric light and power industry is one of the best examples. From both the theoretical and practical points of view, regulation in the form of price control and so forth appears in its simplest form.[2] Only one enterprise needs to be dealt with at a time because customers cannot choose between similar services, and monopoly is maintained by the simple device of allowing only one producer to serve a given area. When this arrangement is disrupted, as in transportation, by the opportunity of practically identi-

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[1] This applies to gas where limited storage facilities are available, since consumption takes place only by direct contact with production facilities. It does not apply to ice for there is nothing in the characteristics of the industry which precludes the use of "shopper's technique."

[2] This does not mean that price control is free from complexities, because there may be a considerable amount of competition, both direct and indirect, but a natural monopoly such as electricity presents the simplest practical problem that we have. Theoretically, a natural monopoly with no alternative source of supply presents the simplest problem of price control.

cal, or effectively alternative sources of supply, the comparatively simple pricing problem takes on a baffling complexity and regulation is faced with a dilemma.

The reliance of the consumer on a particular producer, the essential nature of the commodity or service purchased, and the recognition that orderly competition cannot be used as a means of adjusting conflicts have given rise to special problems of control. It is here that the device of "administered" prices has reached its highest fruition. The crux of the problem is that of rates which are both "reasonable" and "fair"; reasonable in that the profits of enterprise are to be limited to an amount necessary to equate demand and supply as under competition; fair in that price schedules as among customers embody no more differentiation than the exigencies of reasonable profits warrant. This basic problem carries in its train the integral questions of financing, service, management fees, salaries, and so forth. The "administration" of prices stands out in its simplest form but the baffling nature of the "determination" of prices appears in its starkest realities. Although the concept of functional pricing is of real significance, the lack of content in the concept under the restricted conditions which obtain remains a serious practical obstacle to the solutions of the problems raised and presents theoretical difficulties which have not yet been answered.[3]

Methods of Reconciling Conflicts

The attempt to reconcile the conflicts and to solve the problems which arise in the public utility field has resulted in two basic organizational approaches: (1) private ownership with some form of third party control; (2) government ownership.

Private ownership as a condition of the receipt of special privileges necessary to the conduct of a public utility business incurs responsibilities to consumers which are designed to limit the exercise of monopolistic powers. The objective of these limitations is the simulation of competition as far as it is possible to do so. This involves the limitation of profits and discrimination, the establishment of service standards, publicity of rates, and frequently supervision over financial practices. The endeavor to solve the issues raised by these limitations has resulted in the correlative controversies of valuation and fair return in this country. This has led to a deeply rooted doctrine of fair price and has necessitated extensive supervision over management, although the personnel of the management and the disposition of profits have not become a matter of administrative discretion.

The second means of grappling with the problem has been that of direct and outright government ownership. This approach does not differ from the first merely in the matter of ownership. It is based on a fundamentally different philosophy. Public utility services, according to this point of view, should not be offered as a response to profit inducements. The income of the undertaking should be limited to the cost of rendering the services and the term "cost" as used in this connection is seldom synonymous

[3] The concept of functional prices has developed under the theory of a free market. Production is adjusted to market situations. Thus, the market sets the framework within which the pricing process operates. In public utilities, regulation endeavors to simulate the competitive pricing process and to obtain the results of competition. To do this, costs and fair profit are summated to give the price. Thus, the competitive pricing process is reversed. The standard is the same—namely, the equilibrium price and the optimum firm—but costs must be ascertained to obtain the price. They are not fixed by the free interplay of market forces. This thrusts the issues of valuation, depreciation, executive salaries, and so forth into the immediate foreground.

with cost in private competitive business. In other words, the enterprises are not usually required to be self-sustaining in the sense that private concerns must be. This point needs to be given special attention when government ownership is being appraised, for management cannot be held to account for failing to measure up to private standards if the purpose of government ownership is to eliminate some of the responsibilities which private enterprise must assume. On the other hand, comparisons of the operating results of private and public ownership are valid only when they are made on the same basis.

This aspect of the controversy of private versus government ownership is usually obscured in the arguments pro and con. Attention is focussed on the question of whether management of governmentally owned and operated enterprises can be carried out in accordance with sound business principles, without the difficulties presented by disturbing political interference.

It is apparent that the issue is very much the same in either case. The assessing of responsibility commensurate with the powers enjoyed and the creating of incentives to all-round efficiency have been the center of continuous controversy. Efficiency without the objective test of competition, or efficiency rewarded by curtailed profits, is difficult to ascertain and difficult to maintain. Responsibility with divided power presents an almost equal anomaly. These are the conflicts which remain whether we have private or government ownership, even if it is conceded that the enterprises in either case should stand on their own feet.

The endeavor to reconcile the divergent interests of private utilities and the public they serve has led to the development in this country of that essentially American device, the administrative commission. The function of this agency has been to guide, with far-reaching powers, the activities of private utilities in the public interest, or rather consumer interest, with somewhat belated attention to the investor. Only recently, apart from a few notable exceptions, has public interest come to occupy a prominent place. But this is not entirely the result of carelessness on the part of public officials and politicians. The joint offices of policeman, prosecutor, judge, and conciliator are difficult to occupy all at once and serious problems are bound to arise. The success of some of our leading commissions in developing their functions is a tribute to our political ingenuity and the caliber of many of our public servants.

The idea of administrative regulation has not taken much root in Great Britain. It is regarded with considerable suspicion there on theoretical grounds as well as on practical considerations. Instead of using it, Great Britain has turned to the device of the public corporation, which in many respects is a combination of private ownership, government ownership, and regulation.

Great Britain's Experiments

The idea of the public corporation is not new but its use in the administration of the Central Electricity Board, the British Broadcasting Corporation, and the London Passenger Transport Board constitutes a distinct departure and experiment.[4] In essence, the public corpo-

[4] The Port of London Authority created in 1908 is the prototype from which these three agencies emerged, but the Port Authority is primarily an agency established for the purpose of administering the Port of London by representatives, for the most part, of the immediate users of the facilities. The newer boards represent the transition of the service of the port trust into an independent business enterprise, publicly owned.

ration is a semi-autonomous authority or board, created by act of parliament, to conduct a commercial enterprise in accordance with the principles of large-scale production in a capitalistic setting.[5]

In conformity with this idea the first thing which distinguishes the public corporation is that it is semi-autonomous, that it owns its own property, but is not in turn owned by the government; that is, it is neither a non-stock enterprise owned by the government nor does the latter own the stock, where any is issued. In each case the governing body, the board of directors, is appointed by the government but special devices are used to prevent political interference. Although responsibility, in the final analysis, is to parliament, the connections are of that nebulous variety which characterizes much of the British political arrangement. The directors, who form the policy-making group and whose chairman is the full-time head, thus occupy the position of public trustees and in this capacity are the focal point for the registering of public opinion. In other words, the public corporation has been established as an agency to operate certain enterprises for public benefit in accordance with public desires as expressed in various ways, and the governing bodies have been saddled squarely with the responsibility of managing them accordingly. The powers of initiative are in keeping with these responsibilities.

Second, the primary function of the corporations is the production of commodities or services to be disposed of at prices designed to make the enterprises self-sustaining essentially in the private sense of the word. The Central Electricity Board is the owner of the "grid," a system of transmission lines connecting generation and distribution facilities throughout Great Britain. The CEB is thus the intermediary between the generation and distribution facilities and in such capacity is the wholesaler of electricity which it buys from generating plants and sells to distributing facilities. The British Broadcasting Corporation supplies all the radio programs originating in Great Britain and northern Ireland. Private broadcasting is not allowed and, within certain limitations somewhat akin to regulations in this country on matters which may be broadcast, the corporation has complete control over all programs. The London Passenger Transport Board has the function of supplying passenger transport facilities (common carriers) to the population of Greater London.

All three boards are granted monopolistic privileges by statute and essentially enjoy a monopoly over the services they have to offer. The CEB has a monopoly, as a wholesaler, over transmission and the arrangements are such as to insure this. Generation and distribution, however, are in other hands but are not competitive with each other because of the nature of the electrical industry. Nor do suppliers of electricity compete with each other for sales to the CEB. The BBC monopoly is obtained through the ownership of all broadcasting facilities in Great Britain and is facilitated, perhaps even made necessary, by the fact that Great Britain is allotted only 12 wave lengths under the Lucerne plan. It is reinforced also by a compulsory license fee of 10 shillings per year, so that the radio owner is required to pay for the service of the BBC even though he may

[5] For a detailed presentation see: T. H. O'Brien, *British Experiments in Public Ownership and Control* (London: George Allen & Unwin, Ltd., 1937); L. Gordon, *The Public Corporation in Great Britain* (London: Oxford University Press, 1938). See also D. F. Pegrum, "The British Power Set-Up," 23 *Public Utilities Fortnightly* 74–81 (January, 1939); and "The Radio in Great Britain," *Ibid.* 139–49 (February, 1939).

prefer to listen only to broadcasts from other countries. The charter of the LPTB gives it a complete monopoly of all common carrier passenger transport over a district known as a "Special Area" and a more limited monopoly in the "Outer Area." The LPTB became the owner and operator of all the surface lines, underground railways, motor coaches, and omnibuses operating in the Special Area and no one else is allowed to offer common carrier passenger service in that region.

In accordance with the idea that the boards are to conduct commercial enterprises on a non-profit basis, specific financial and revenue arrangements have been established. It is intended that each of the three enterprises shall be supported by the revenue which it receives from the sale of its product. The prices charged for the services are to be sufficient to defray all expenses of operation, costs of capital, taxes, and so forth just like any independent private enterprise and the wages and salaries of the employees are treated likewise. The latter are not civil servants.

The income of the CEB is derived from the sale of electricity at wholesale rates set forth in the general tariff established by the Board subject to a certain amount of control by the Electricity Commissioners—an independent regulatory agency—who must approve the tariffs and the margin above expenses the Board may receive.[6] The revenue of the BBC is obtained from the license fee of 10 shillings levied on all owners of receiving sets. This fee is fixed and collected by the Postmaster General who deducts the costs of administration and turns the balance over to the corporation. A considerable item of revenue is obtained from the sale of publications of the BBC and from advertising space in the publications. No advertising is allowed over the radio itself. The revenue of the LPTB is obtained entirely from its traffic, the rates for which are subject to the supervision of the Railway Rates Tribunal. This body is prevented from making rate adjustments which will affect the Board's financial position adversely.

In keeping with the idea of capitalistic enterprise the corporations are supposed to be financially independent and to raise capital from the public. The independence in the matter of finance, however, is subject to certain limitations arising from the relationship of the corporations to the government. The CEB is authorized to raise capital from the sale of non-voting stock (debentures) to the public up to an amount of £60 millions. The return paid on the stock depends, of course, upon the conditions of sale. The Treasury may guarantee the stock up to £33½ millions. Presumably the guarantee is not retroactive and must be requested at the time the issue is made.

The financial set-up of the BBC is quite different from the CEB. The BBC took over the property of its predecessor without encumbrance upon repayment of the £71,536 par value of outstanding stock. The charter permits borrowing by the sale of stock up to £1,000,000 and the power was exercised in order to purchase property in 1931. However, the obligation has since been discharged and the corporation is now a non-stock enterprise. Subsequent expansion has come entirely from revenues and these seem to be adequate for all such requirements.

The financial structure of the LPTB is more complicated than those of the other two corporations because of the

[6] See M. G. deChazeau, "Rationalization of Electricity Supply in Great Britain," 10 *Journal of Land & Public Utility Economics* 254–67 and 365–90 (Aug. and Nov., 1934) for a discussion of rates of the CEB.

more complex situation which existed at the time of the establishment of the new enterprise. Only the broad outlines need be stated here. In addition to the amount necessary to provide for the acquisition of its properties from the predecessor enterprises, the Board has been empowered to raise a total of £42,686,650 by the sale of non-voting stock. The total stock outstanding is approximately £112 millions. This is divided into five classes, the first four of which bear fixed rates of interest and one group is guaranteed by the Treasury because of previous arrangements. The fifth class, "C" stock, bears a maximum rate of interest of 6% and a recognized minimum rate, but it is not guaranteed nor is it cumulative. However, the holders of the Class C stock have the right of court action if the corporation fails to pay interest for three successive years beginning July 1, 1935. This stock amounts approximately to 20% of all stock at present outstanding.

In addition to the features sketched above, the corporations also possess certain powers that amount to regulation. Within their own spheres, subject to a certain amount of control by government and administrative agencies, they regulate the field in which they operate. The CEB as the wholesaler of electricity is responsible for the coordination of production and transmission of electricity in Great Britain. In fulfillment of this function it has gone a long way toward standardizing the generation of electricity by concentrating it in the hands of "selected" stations which are privately owned, but operate in accordance with contractual conditions laid down by the Board. In return the Board agrees to buy all that these stations produce at a price which covers expenses plus a return on capital.

The BBC by virtue of its monopoly not only controls and determines radio broadcasting in Great Britain, but also possesses considerable power over the entertainment world. This power has brought conflict with the press, musicians, actors, and the motion picture industry and threatens to extend even into the manufacture and sale of receiving apparatus. Because the statute which creates the BBC is not a specific document,[7] the powers of control under it are really much more comprehensive than those of the other two corporations.

The LPTB, in addition to being given a monopoly of common carrier passenger transport in a specified area, in which it does not have to acquire a road service license, may allow bus or coach service to be conducted by another outside enterprise within that area. The Board is required to work out coordination plans with the four railway companies operating in and out of London. This is accomplished by a joint committee consisting of eight members, four of whom are appointed by the LPTB and one each by each of the four railways.

Appraisal of the Experiments

From this summary it is thus apparent that the public corporation is designed not only to perform the function of supplying public utility services under publicly owned monopoly; it is also designed to provide means of controlling the supply of those services through the medium of a publicly appointed board which thereby takes over extensive functions of regulation. From the point of view of this country the significant questions are: To what extent does it offer a solution to the vexing problems of the supply and regulation of public utility services? And to what extent could the proce-

[7] That is, it has greater freedom of independent action and judgment in the conduct of its enterprise and is practically free to develop the whole policy of broadcasting in Great Britain.

dures be advantageously applied here?

In both theory and practice Great Britain has lagged behind in the development of control of enterprises that are basically monopolistic. Competition and the powers of local authorities have hindered the growth of integration, and the idea of administrative supervision has not taken very deep root. The public corporation is the compromise designed to deal, in part, with the problems that have arisen. As has been noted, considerable powers of regulation are enjoyed by the corporations. In addition, however, to the general powers of supervision exercised by the government, other regulation has been deemed necessary. The Electricity Commissioners are the administrative counterpart of the CEB and the plans of the latter must be sanctioned by them. Also the Commissioners must approve tariff schedules and finance. Although the CEB regulates production through contracts with "selected" stations, so far nothing has been done about distribution in spite of the fact that this problem had reached the acute stage before the outbreak of the war.[8]

Similarly, the LPTB is subject to a degree of regulation. The Railway Rates Tribunal has power to revise all passenger fares of the Board as well as control withdrawal or addition of services and facilities. The exercise of these powers is subject to the condition that the Board shall be able to fulfill its obligation of being financially self-sufficient.

The regulatory powers of the BBC are of a much broader nature than those of the other two. It has thorough-going control of radio in Great Britain and, apart from restrictive powers enjoyed by the government, it is limited only by the activity of advisory committees, all but one of which are appointed by the Board. These committees, however, are an integral part of the arrangement and hence cannot be treated with impunity by the Board.

It is apparent that external regulation has not been dispensed with and there is considerable evidence to indicate that this phase of control is bound to grow. The relationships of consumer and producer are such that a third party is necessary to reconcile the conflicts and the public corporation, at most, has only partially met this problem.

The responsiveness of management to the duties placed upon it presents a similar issue. The members of the various boards of directors are appointed by devices designed to keep them free from political influence. At the same time the directors are supposed to direct the enterprises so as to reconcile the various interests of labor, capital, and the public. The powers they enjoy are great, but it is an open question whether the means of securing the discharge of the commensurate duties are adequate. The position occupied is one of public trust and in a country where the sense of duty of public servants has developed to a high degree satisfactory results may ensue. If independence from political interference is to be maintained, however, some additional means of ironing out producer and consumer issues and problems of public policy seem to be desirable. In this respect the situation is very similar to that existing with private management. The interests of consumer and investor and the broader questions of public policy can scarcely be left to the uncontrolled judgment of private executives, no matter how great a sense of public duty the latter may possess. Unless one assumes

[8] See S. P. Langhoff, "Rationalization Trends in the Electricity System of Greater London," 11 *Journal of Land & Public Utility Economics* 133–45 (May, 1935) for a discussion of this difficulty in connection with the city of London.

greater ability and a higher concept of public responsibility on the part of publicly appointed officials, the problem remains the same in most respects. Even if these assumptions are valid it must still be remembered that all conflicts and differences of opinion are not attributable to human perversity and selfishness.

The question of profits presents similar difficulties. The enterprises discussed are supposed to be non-profit organizations. Under the arrangements the term "non-profit" must mean no more net income than necessary to accomplish the purposes of the corporation. But charges are to be fixed so as to meet all expenses of operation, maintenance, depreciation, interest on capital, amortization and, in addition, to accumulate an adequate margin of safety.[9] In the case of the BBC even expansion comes primarily out of revenue and large "donations" have been made to the Treasury. When the problem is stated in this fashion it obviously emerges as the perennial issue of "reasonable rates." To determine the reasonableness of charges under such circumstances raises squarely all of the complexities facing commissions which have the responsibility of regulating privately owned utilities. The latter are, by the same token, non-profit organizations. The device of the corporation offers nothing to the solution of these difficulties. Indeed, if public and private ownership are both required to stand on their own feet, the economic problems are identical, with public ownership suffering from the disadvantage of a too rigid financial structure. Furthermore, unless a regulatory agency is established, rate structures must be constructed on the judgment of the management alone which must deal with the ever present problems of discrimination as both actor and judge. The consumer is literally without an advocate.

Conclusions

The emergence of the public corporation in Great Britain in radio, electricity transmission, and London Transport can be attributed to a considerable extent to unique conditions. The limitation of wave-lengths in broadcasting; the necessity of standardization, rationalization, and interconnection in electricity; the need for unification and coordination in London transport—all these suggested a solution by a single organization in each case. Radio and transport offered little chance for more than one enterprise; hence, the public corporation seems to be a logical compromise between government and private ownership. An alternative solution to the problem facing the electric industry could have been reached by regional consolidation under a number of private concerns subject to thorough-going regulation. This might have been the best answer but the strength of local government, the movement for socialization in the post-war period, and the lack of experience with administrative regulation turned the scales. Had it been necessary to establish a number of different corporations to perform the same functions, private ownership and regulation would probably have been resorted to. A number of public corporations requiring coordination and supervision would have solved or altered scarcely any of the problems and would have added the difficulty of maintaining independence from political interference in management. The very basis of the public corporation, so far in Great Britain, has been a monopoly without a

[9] See John Thurston, "Unification of Passenger Transportation in London," 10 *Journal of Land & Public Utility Economics* 128–36 (May, 1934). The writer of this article recommends that all securities be amortized and that financing be out of earnings so that London transport may be completely "socialized."

parallel producer. The country has not yet seen fit to deal with the railroads in this fashion and it is doubtful that such a step will be taken, unless complete unification is decided upon.

In its unique position, then, the public corporation has much to commend it. However, we should not lose sight of the fact that most of the basic problems connected with public utilities are not solved by its magic name. Perhaps management, because of its position and method of appointment, may show a greater sense of public responsibility but regulation has been necessary and more of it may come unless complete socialization is resorted to. Financing has probably been cheaper than it would have been under private ownership, but this has been achieved at the expense of flexibility in the financial structure. This may prove to be a decisive factor in the final evaluation. The LPTB has faced the difficulty from the outset. As the use of electricity spreads, the electrical industry will become more integrated with the industrial structure and more vulnerable to the fluctuations of the latter. The financial problems of the CEB will become accordingly more difficult.

The conclusion reached, then, is that the public corporation is not a promising alternative to private ownership and regulation as we have developed it in the progressive jurisdictions in this country. If it is assumed that utilities are to be operated as fully self-sustaining enterprises and that no special privileges, such as relief from taxation and so forth, be given any particular group, the fundamental problems are essentially the same. Public utility issues arise primarily from the structure of the industry and not from the form of ownership. If, however, for some reason or other, public ownership is decided upon, the public corporation as it has developed in Great Britain (It includes pro rata taxation.) is to be preferred to direct government ownership or government ownership with special privileges and immunities which is characteristic in this country. The policy of Great Britain brings the issues of public ownership clearly to the fore and subjects them to practically the same tests as private ownership.

Urban Land Department

MORTON BODFISH, *Editor*

Defense Housing

THE defense housing legislation, approved by the President on June 28, 1940 (Public No. 671, 76th Congress), authorizes the War and Navy Departments and the United States Housing Authority to undertake the provision of such housing as the government itself may have to build in connection with the preparedness program.

Restrictions with reference to family incomes and other limitations on the operations of the United States Housing Authority which would interfere with its assistance in this connection have been removed. Equivalent elimination of one substandard dwelling unit for each new one built is not required. One hundred per cent of the development cost may be financed directly by the United States Housing Authority. Funds used for defense housing may be excluded in applying the existing provision which limits funds used in any one state to 10% of the total funds.

On the positive side, the United States Housing Authority is given power to purchase land, using federal powers of condemnation, and may either sell such land to local housing authorities for the development of defense housing or itself directly build such houses. The intention of the Authority is to work through the local agencies. It proposes to relax but not entirely to remove the income limitations and equivalent demolition requirements.

The expectation is that practically all of the defense housing will be built on vacant land. The Authority also anticipates that rentals will take care of costs with little or no subsidy, until such time as, following the present emergency-preparedness effort, the defense housing may be reconverted into subsidized housing for low-income families.

In addition to unallotted funds, those which are now earmarked for projects or under contract may, with the consent of the Authority, be revised so as to bring the projects in question under the new legislation as defense-housing projects. At present some 30,000 families are tenants in United States Housing Authority subsidized public housing projects and additional dwelling units are reaching the occupancy stage at the rate of 5,000 a month.

With respect to housing of enlisted men with families, the new legislation authorizes the Army and Navy Departments as well as the United States Housing Authority to provide the needed dwellings. These particular dwellings will be located on or near navy or military reservations, posts, or bases.

The United States Housing Authority alone, however, is authorized to undertake the building of houses for civilian workers with families, who are engaged or to be engaged in industries connected with and essential to the national defense program. The decision as to when and where such housing is necessary rests with the President *after* he has determined that there is an acute shortage of housing in the locality involved which impedes the national defense program.

It appears at the present time that civilian defense housing to be financed entirely by the government will be needed either (1) in isolated places where munitions plants may be erected, or (2) in smaller communities which are unable to provide the additional houses needed as a result of a sudden expansion.

It is by no means evident, however, that government-financed, civilian, defense housing will be needed generally in existing industrial areas. Increased transportation facilities, for example, make the problem of defense housing far less widespread than it was in 1918. It is doubtful if the problem could even arise in all those situations where the armament-production plant involved is located in or near a fairly large metropolitan area.

Although the civilian defense-housing problem is not extensive in scope, it is intensively important in the areas where it does exist or may presently develop. Of major importance, therefore, is the task of getting the needed housing into production in the quickest possible time.

It also seems to be clear from such investigation as has been made of the problem that no one pattern will be the correct solution in all of the areas which may be involved. How

much housing can be permanently absorbed, how much must be temporary, how much obsolescence of existing housing can be properly forced, is a slum problem involved, can the housing be turned to other uses later, what is the status of collateral-industry expansion in the area, how much home ownership, how much rental housing—these and other factors must be given different answers in each community. What will work for one may be all wrong for another.

While attention is being directed to defense housing, the present large volume of private residential building and modernization should not be overlooked. It will reach a total of some two billion dollars this year and will make a very substantial contribution to the country's economic preparedness. It not only provides the building industry with taxable funds to help pay for defense expenditures, but also creates for the nation additional taxable assets in the form of new homes in its communities.

F. Stuart Fitzpatrick
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New York City Revises Its Zoning Ordinance

NEW YORK CITY has just adopted the most elaborate series of amendments to its zoning ordinance (hitherto called locally the building zone resolution) since its original enactment in 1916, and the most comprehensive recent revision of any zoning scheme. The episode is instructive both philosophically and technically. In a short news note one must forego the pleasure of entering into critical discussion of all the technical points involved, and paint the picture in broad strokes, perhaps pointing a few morals.

The new City Charter, which for the first time provided New York City with a planning commission, became operative on January 1, 1938. Novel zoning powers were conferred on the new commission: it could after public hearing adopt amendments to the building zone resolution, and unless disapproved within 30 days by a 3/4 vote of the Board of Estimate (the upper chamber of the local legislature) the action of the planning commission was to stand as law.

Representations had been made by civic groups even before adoption of the charter that the zoning resolution required extensive overhauling. The planning commission recognized what is not too widely understood in planning circles—that zoning is a legal device to implement a master plan—and that

> "more fundamental revision may be indicated upon completion of a number of the basic Master Plan studies. . . . At the same time there would appear to be no good reason for denying to the residents of this City the advantages to be gained through such zoning provisions as are enjoyed elsewhere."

The planning commission accordingly adopted a long series of detailed amendments, most of which aroused no protest and were accepted by those who gave the matter any attention as desirable modernizations. First came technical and routine changes, and changes in definitions, to bring the old zoning resolution into harmony with the new City Charter and the Multiple Dwelling Law of the state. Then, in the classification presented in the commission's report, came a series of "improvements in standards and methods." Many of these will not strike the readers of this *Journal* as original; they were not claimed to be. In zoning, as in other public improvements, the metropolis has paid the price of pioneering; many a midwest county seat has brighter street lights on its main stem than has Fifth Avenue.

Thus, New York has just redefined "curb level" and "height of buildings" so that the height of an apartment house set back more than 25 feet, or on a street with no established curb level, shall be measured from the average level of the immediately surrounding plot. We had that provision in my suburban village in 1930. In this class of change, too, are the attempts to fit multiple dwellings less awkwardly into the "E" and "F" (most restricted) area districts—where they were not originally contemplated—by introducing an "entirely new principle of bulk limitation . . . expressed in permissible area of floor space in the building in proportion to the area of the plot" (1.6 ratio in "F" Districts).

Next comes a series of "entirely new districts and provisions" to "deal with urban problems which were practically non-exist-

ent" in 1916, such as trailer camps, bus stations, and airports; and "to foster" hitherto "inadequately protected" developments, including low-density garden apartments, row and group houses, and strictly local shopping centers.

The technique adopted for handling trailer camps and bus stations is that which the commission sought to use in many of its amendments: recognizing the many considerations which must enter into the wise location of such facilities, the commission excluded them as a matter of right in districts of intense use, leaving it to an administrative body, the Board of Standards and Appeals, to grant permits subject to special conditions and safeguards. Apparently the trailer-camp and bus interests were less sensitive, or less well organized, than the advertising and oil companies: these provisions aroused no protest; a similar approach to the problem of filling stations and advertising signs almost led to setting up barricades in City Hall Park.

The use of zoning to control building heights around airports is the subject of controversy.[1] The New York Commission rejected the method of setting up a separate system of height regulations for these areas. The structure of the zoning resolution does not provide explicit maximum height limits; it prescribes basic dimensions, above which building may proceed indefinitely (in many types of districts) by successively and proportionately greater bulk limitations (setbacks). It was therefore not possible to proceed merely by amending existing height-district maps.[2] The most that could be done at this time was to prohibit exceeding the basic height limits within a mile of a public airport except with permission of the administrative Board, subject to conditions and safeguards.

To many citizens, "row house" conjures up pictures of dreary brownstone fronts or solid blocks of Philadelphia 12½-footers. Yet the studies of Henry Wright and others over the last decade have demonstrated the superiority of the attached house for economy, if its setting is controlled. Attached houses have been forbidden in New York in the most restricted districts by the requirement of side-yards; in the districts where they have been allowed, they have not been protected against the intrusion of apartment houses. Accordingly, a new class of district has now been created to encourage the attached house, with an exceedingly interesting provision to promote "group" rather than "row" houses. No side-yard is required; but if there be one, it must have a minimum width of five feet: and for rows of houses, the combined yards at the ends of the row must total five feet times the number of houses in the row. The commission hopes that this provision will lead to flexibility in site planning, and discourage solid block fronts.

The "garden apartment" has troubled zoning officials since FHA insurance has made the term popular. "Commercially," says the planning commission, "the term has been applied to any building of relatively moderate coverage, with some greenery for a setting." To encourage "genuinely open garden apartment districts," a new class has been created, superimposing upon the normal area provisions of the already restricted "F" district a ratio of floor area to lot area of 0.75: a 3-story building may cover 25% of the lot, a 6-story building only 12.5%.

At this time, no map changes have been made locating these new "F-1" Districts; the initiative is left to property owners who desire protection to petition for changes in the area-district map.

Other "new provisions"—the only ones of which space permits mention—call for the provision of off-street loading facilities in all "new or substantially altered buildings used for purposes involving substantial trucking"; and permit the administrative Board—with a favorable report from the planning commission—to vary the lot-by-lot restrictions of the zoning resolution to facilitate large-scale housing projects (over 75,000 square feet), so long as the density and other general standards of the resolution are not weakened by the variance.

The boldest attack of the planning commission was upon the problem of garages and filling stations, and business and advertising signs. It was here that the commission's proposals met articulate and organized

[1] See American Society of Planning Officials et al., *The Airport Dilemma* (Chicago: Public Administration Service, 1938), pp. 42–3.

[2] The New York ordinance, it will be remembered, has the antiquated arrangement of three separate classes of districts, with three separate sets of maps—use, height, and area—resulting in the possibility of endless permutations, combinations, and confusion.

opposition; and it was here that the Board of Estimate mustered the votes to override or modify the commission's proposals.[3] Indeed, even within the commission, a minority (two engineer members) had filed a report dissenting in part; it was this minority view that the Board of Estimate followed.

The approach of the commission was the urgent need of weaving the automobile more flexibly into the life of the city. To this end, provisions were proposed (and accepted by the Board of Estimate) to permit group garages in connection with group-housing developments—even to permit them for row houses, to do away with the little tin box in the back of each dwelling. Another section permitted outdoor or indoor parking spaces for tenants or patrons of business buildings. It was not proposed to eliminate the long-standing provision prohibiting public garages and service stations as a matter of right in restricted districts;[4] as before, a permit would be required from the administrative Board.

However, the old ordinance provided that a permit for a public garage in a restricted area could be issued only if the petitioner filed the consents of the owners of 80% of the frontage deemed immediately affected; and not at all within specified distances of schools or hospitals. Furthermore, the old ordinance authorized the Board to issue a permit in any block in which a public garage existed, or a public stable had existed in 1916. Finally, there was no provision to end non-conforming public garages, other than through natural attrition, a force which had been strikingly inoperative during the last 25 years.

The "80 per cent consent" clause had resulted over the years in a notorious traffic in consents, and hampered the scope of the Board's discretion. The planning commission acted to strike it out. And boldly, the commission proposed to end the "perpetual monopoly" apparently conferred by the "*exclusive* right to conduct these non-conforming activities," by compelling filling stations at the end of five years to come to the administrative Board for a permit to continue, subject to safeguards; and compelling garages within the prohibited distance of a public institution to seek similar permission after 10 years.

The commission made a similarly bold attack on commercial signs. It proposed to distinguish in future between generally permissible "business" signs relating only to activities on the premises, and "advertising signs" to be severely limited—prohibited even in business districts as of right, subject to permission by the administrative Board; and similarly prohibited in the vicinity of parks, parkways, and express highways. For Times Square and its like, new use districts were to be set up in which these limitations would not apply.[5] Non-conforming business and advertising signs were to be terminated in two years, subject, like non-conforming gasoline stations, to review and extension for a stated term of years by the administrative Board.

It was at this point that the picket lines formed around the City Hall, and the Real Estate Boards bought large advertising space urging shock troops of protest. Cries of "confiscation," "radicalism," "disregard of property rights" resounded—not only from the throats of little property owners who might be excused for having been excited by lurid statements about technical matters which they did not understand. It was sobering at the hearing before the Board of Estimate to hear Borough Presidents on the dais talk about vested interests in non-conforming uses as though a certificate of occupancy granted in 1916 were a franchise—men who should have known that no one can acquire a vested interest against the police power.[6] It was frightening to hear city

[3] One of the aftermaths of the battle was a resolution introduced in the City Council to amend the charter so that zoning changes adopted by the commission should be *ineffective* unless approved by a ¾ vote in the Board of Estimate, instead of being effective unless overridden by ¾. Anticipating forces that would seek to whittle them away, the framer of the new charter provided that any charter amendment in derogation of the powers of the planning commission must go to popular referendum—a provision which the introducers of this measure seem to have overlooked.

[4] Unlike more modern ordinances, the original New York zoning resolution left unrestricted all parts of the city the future use and limitations of which could not clearly be foreseen, making it exceedingly difficult to impose later restrictions, as Park Commissioner Moses recently discovered when seeking changes in the zoning map to protect his new circumferential Belt Parkway.

[5] On his one brief visit to the United States, G. K. Chesterton was asked his opinion of the Great White Way at night. His reply was, "What a wonderful sight this would be for one who did not understand the English language."

[6] *Hadacheck v. Sebastian*, 239 U. S. 394 (1915).

officials talk about the unconstitutionality of the resulting diminution of property values—the same argument used against the original ordinance in 1916, and presumably finally disposed of in 1926 in *Euclid* v. *Ambler*.

It was also food for thought that not one of the important civic planning organizations was ready firmly to back the planning commission in its attempt to loosen over the next decade the dead hand of the mistakes of 1916. Their few spokesmen were ready to praise this or that proposal; but these "retroactive" clauses, as the opposition branded them (they seemed "prospective" to me), were apparently too much for civic leaders with affiliations in institutions which had financial interests in filling stations. Or else the proposal to provide needed flexibility in so complex a situation by entrusting discretion to an administrative board aroused the cries of "bureaucracy" and of Lord Hewart's "new despotism" that have been coming from the supporters of the Logan-Walter bill.

It was less surprising to hear from an endless stream of protestants that their families would have to go on relief if the husband-father's job as a sign painter were taken from him by these highhanded proposals; or that their house next to a school was uninhabitable because the noisy children broke the windows, and therefore they must be allowed to sell the lot for a filling station.[7]

Subsequent to its public hearing on June 20, the Board of Estimate went into executive session, with representatives of the planning commission, and on June 27 "modified" the "amendments" previously adopted by the planning commission on May 29.[8] Most of the changes adopted by the planning commission were permitted to stand untouched. The "retroactive" clause to eliminate billboards after two years went out of the window—although the sign interests confess that the "prospective" controls condemn them to slow strangulation rather than early decapitation, because of the rapid depreciation of billboards. Advertising signs are not automatically prohibited along parks and express highways; the planning commission must affirmatively designate the highway as one to which the prohibition is to apply. Non-conforming filling stations and public garages are not automatically required to show cause before the administrative Board after five or ten years to justify their continued existence. The Board of Estimate adopted instead the proposal of the two minority members of the planning commission, that such non-conforming uses might be continued

"... unless determined by the Board ... to be a hazard to life, health, or the general welfare. Any public agency, department head, or public institution may petition the Board ... to terminate such existing use, stating reasons therefor. In considering the termination ... the Board shall give due consideration to the general welfare and to the investment involved."[9]

For future public garages and filling stations, the Board of Estimate agreed that the administrative Board must limit its permit to a stated term of years. In business and retail districts, no consents of neighboring property owners are to be required; in more restricted districts, or within prohibited proximity to a school or other public institutions, consents are required of 50% (not 80%) of the owners.

As a result of two years' work by the planning commission, New York's zoning resolution has been brought abreast of developments elsewhere in the country during the last decade; in some respects, New York is again ahead of the procession. The city is still condemned to tolerate public garages where stables happened to be in 1916; a bold attempt to set up machinery to rectify the errors of the past was largely frustrated. New York's already cumbersome ordinance has been complicated by the creation of

[7] It is also food for thought that the newspapers in which the Real Estate Board advertisements appeared published chiefly columns of publicity releases of organized protests. Only *PM*, the new daily without advertising, on the eve of the hearing gave a balanced story from which a citizen could learn what the planning commission was trying to do and what were the arguments against it. Did the planning commission do its full duty in providing the newspapers with factual material explaining its proposals?

[8] The expressions quoted in this news note as sentiments of the planning commission are from the "Report and Resolution of the City Planning Commission Amending the Building Zone Resolution, Adopted May 29, 1940." The "Zone Resolution, as Amended by the City Planning Commission and Modified by the Board of Estimate, in Effect June 28, 1940" is available in pamphlet form from the City Planning Commission, Municipal Building, New York, for 25 cents. The pamphlet contains relevant extracts from the City Charter, the rules of the Commission, sample forms for petitions, etc.

[9] The last sentence is particularly interesting in view of the protests that the planning commission's original proposal was an unwarrantable delegation of discretion to the Board for failure to set up adequate standards.

seven new classes of districts. In short, fundamental revision still remains to be undertaken, when adequate staff is available for the substantial studies involved, and when the master plan is far enough along to support implementation.

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Avoiding "Census Jitters"

PRELIMINARY and partial local population-counts of the Census are now sufficiently numerous to indicate what may reasonably be expected from the complete report. Since many of these counts are very different from the "estimates" made from time to time during the past decade, and also since many indicate trends the *reverse* of what has actually been taking place—even recently—it is important for all interests to see the situation which is so indicated as soon as possible.

Too much importance must not, however, be given to mere growth or *loss* of population. It is more *indicative* than it is important. Experts assign to it an importance of say 15 as compared to many other indexes of economic and social well-being which run to five times that amount.

Also it is well to remember that the *population-size* of a community, which is raised or lowered by such growth or loss, is of almost no significance for the things that most matter in making a community *soundly prosperous and progressive*. Only a very great growth or loss affects the population rank of a city enough to change substantially its general fortune. Of course, different business and social and even political interests are differently affected by population numbers and changes therein. This analysis refers to the effects on all except the most special interests.

From this point of view, the best places are known to be the lesser cities; generally speaking, places less than 100,000 are twice as good as places above that size, and many times as good as those of 1,000,000 and up.[1] No one knows how the small cities and the towns would rate in similar terms, but the presumption would be that they would rate not so well as the lesser cities—especially the residential suburban ones. The non-suburban lesser cities, however, which rank better than average are more numerous, though not so outstanding. Three-quarters of all suburbs are places of a few thousand, close-clustered, and "not so good."

It is important to recognize these principles in judging the population figures in order to avoid "statistical (or census) jitters." The Census is to be highly commended for the economic, social, and other than mere population data in its count. The sooner the findings on these additional factors are published the better, as the population figures are spectacular and disquieting. Since it is wealth and well-being that people and government alike are really concerned about, it is doubly important to know what significance the population figures have. It is a solemn fact today that our best rated places are growing quite slowly. What can the matter be?

What the current Census so far reveals is a continuance of trends recognized since 1910. When it is noted that many great cities are *losing* for the first time in their history, it must be remembered that this is not so great a change from a steadily declining rate of growth.

This country may need a "good five-cent cigar" but it also needs some different criteria for judging business and society than the traditional one of mere numbers—the result of an expanding and young country. Quantitative standards must now—and quickly—be replaced by qualitative ones.[2] Our people and their leaders will need to see things from this new point of view to meet the new trends being revealed by the current Census.

For a century, the nation and its component communities have been growing almost without exception. Of course, there was laterally rural depopulation. In the last Census a few cities showed losses and many a greatly reduced growth. Not many people learned that within cities there was loss centrally and rapid gain in the outlying wards. The idea that suburbs were important in numbers and growing faster than the cities became familiar. Quite recently the idea of a stationary population for the nation

[1] See Edward L. Thorndike, *Your City* (New York: Harcourt, Brace & Co., 1939) and my comment thereon, "Appraising Urban Communities: Techniques and Objectives," 16 *Journal of Land & Public Utility Economics* 1–7 (February, 1940).

[2] See my article, "Breaking the Lock-Step of City Classification," *American City*, January, 1927, p. 87.

in another generation has become familiar. *Now* the current Census indicates that all this has "come to a head."

The national gain is indicated as much less than was estimated, having slackened by years throughout the decade. It will likely be shown to be about 1/2 that of the previous decade. For since immigration has turned into emigration, the decline of almost 1/2 in births naturally produced this result. Internal migration between country to city,[3] between cities, from city to suburbs, and within suburban series and from one part of the country to another is now especially active. This is the primary factor which is causing the reversals of growth and loss in cities.

It is now a well-established principle of city growth that generally speaking cities once large come to grow at about the national rate. This seems logical for they are national centers. There are exceptions, however, such as Los Angeles and Detroit, recently and even currently.

As this country, in its relative isolation, mobilizes nationally and looks homeward rather than as throughout its history internationally for population and markets, these national, and hence great-city, trends will be intensified. "We ain't seen nothing yet."

Of the national growth, much reduced as it is, nearly 1/2 is indicated as being on the Atlantic seaboard, and about as much south of New York as north of it. Perhaps a quarter of the states will show loss of population and this may include states which are urban and industrial. Internal migration has been very active, people making adjustments to depression and other national and world conditions. With the exception of California, which continues exceptional (especially with respect to the growth of Los Angeles, which is twice that of the average of the great cities in these times), the westward movement is over; in fact, as indicated above, the East and the South are now the Frontier.

But even more spectacular are the *changed fortunes of great cities*. In the past, for a century, the bigger the city the faster it grew. The urban, metropolitan, megalopolitan hierarchy was well defined, and seemed persistent. Cities grew, until recently, fully twice as fast as the nation. Curernt indications are that they now are growing in only about the same total numbers as the nation, which would be at the same rate, since they include something more than 1/2 the national population.

The population of the country is now about equally divided—1/3 in great cities, 1/3 in small cities and towns, and 1/3 in the country. Urbanism, whether viewed as all classes of urban places (towns and cities generally), or as great cities, or even as suburbs, is no longer the dominant "feature" as ruralism was earlier in days of the frontier. *A better balanced country, with interurbanism dominant, seems ahead.*

This is not inevitable, of course, if recognition of the trend leads to the proper adjustments in city and regional planning and metropolitan reconstruction generally. The current Census only "flashes danger signals."

The last 20 years have not been a depression but an almost epochal crisis. The many "booster estimates" made in all parts of the country in the early 30's, which foresaw return trends of the traditional type, are now to be revised. Those were so far from eventuating that the estimates for a mere dozen great cities are now seen to exceed the total gain of the nation!

All this compels communities to emphasize conditions of general welfare and living conducive to natural increase of population and to holding and attracting population. Criteria other than mere population size and growth will have to be used.

Current population trends indicate that if great cities, and especially their central districts, are now undesirable, even the suburbs in general are not the most attractive, under prevailing conditions. There are indications in the partial current Census reports that *the main goals of movement are non-metropolitan.*

Since nearly 1/2 our people are in such metropolitan regions which occupy only some 5% of the area of the country, and since a large proportion of the national wealth, e.g., mortgages, is involved in these areas, their conditions and fortunes are of outstanding importance.

Many interpreters—especially in the press—of the current trends seem to think that the great cities' loss has been the suburbs' gain, and that *looking at the matter as a "metropolitan regional" one*, there is still "blue sky," or at least the possibility of such. Many have reproached municipal governments for the situation; and this is a

[3] See "Farm Population Estimates," USDA, Bur. of Agric. Econ., released July, 1940.

factor, but not the principal one. It is a national matter, and the education of the general public as to what are the trends is the only thing which would allow even reform governments to reconstruct. For maladjusted great cities will not permit the suburbs to develop; the two are co-parts. Fifteen years ago Douglass suggested this in *The Suburban Trend* and I wrote in the *National Real Estate Journal*, "Will the Suburban Trend Continue?"—an unpopular caption then.

The current Census is to include data on nearly 50 more lesser metropolitan districts. This may becloud the issues but, if discretely studied, will give invaluable information on what I have above called "non-metropolitan goals."

Naturally the early reports on the larger cities are easier to adjudge. The urban slackening is all along the line, but is, generally speaking, 50% more aggravated for the great cities than for the lesser. However, the sharpest loss so far has not been so shocking—a reported 10% for a noted industrial suburb of the North Central division. The reporting of the cities seems about 2/3 complete, and the trends discussed are largely correct.

In the suburban field, to which so many look hopefully, the larger suburbs show relatively and unexpectedly slight gains. This is true even of the group of residential suburbs—like Pasadena, Montclair, Evanston, etc.—which are rated the best in the country in "general living conditions." It may well turn out that the many and rapidly increasing number of small suburbs and interrurban places, well located laterally from suburban series and interurban between metropolitan districts, will show the greatest gains, and most of the gain in the reduced growth of the nation.

A number of independent cities and a number of small places throughout the country, because of special location or resources, such as oil, etc., show sharp gains. But this is not the dominant. Washington's growth is outstanding.

Beyond 20 miles from the larger cities seems to be the zone of growth. This includes the *outer portion of the metropolitan districts* of the Census. But it should be observed that both sharply gaining and sharply losing places appear in this zone—with the balance in favor of the gaining.

In general, the great cities are gaining at about 1/4 their traditional rate, and to include the suburbs and think "metropolitanally" does not so greatly change the generalization. Metropolitan New York is reported as gaining at only 1/2 its former rate. Metropolitan Chicago (Cook County, at least), with the city gaining less than in any decade in its history, has not made good the gain and will probably show a total gain just equal to the city's alone in the last decade; Los Angeles has dropped from doubling and more to a mere dozen per cent, though there is almost equal population in the far-flung suburbs, which will likely considerably increase this general gain.

Two important facts about these trends should be noted. The movements, losses and gains *within* cities are greater by far than the changes and reversals of cities as wholes. Also the social composition (kinds and conditions of people) of cities, suburbs, and of parts of cities will be found to have changed even more spectacularly and significantly than the mere changes in numbers.

The changes from the former decade in growth and loss have not after all been so great, although highly indicative, but the changes in status have. The two are, however, closely related.

When the returns for the lesser metropolitan regions are in and the figures for all metropolitan districts assembled, significant differences between them will be apparent. Ratings of all cities over 30,000, which includes all great cities and their most important suburbs (with over 1/2 of all the suburban population), made by Thorndike show some metropolitan districts very much superior to others in "general living conditions." The kind of metropolitan situation to which more communities should approximate is indicated. The great cities and metropolitan districts need not, therefore, get too "jittery" over the indications of the current Census but rather find in it *guiding principles for bigger and better metropolitan centers*.

A large part of the vital strength and weakness of warring nations abroad is their differences of metropolitan structure and life. American mobilization calls for doing the most and best with our "urban resources" and the current Census is certainly pointing out the necessity.

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State Regulation of Flood-Plain Use

STATE regulation of flood-plain use offers a partial remedy for the mounting toll of flood damage in the United States. Flood damage is being reduced by control works in some localities. It is increasing in other communities where individuals are continuing to encroach upon the natural flood plains. Some flood-control works are actually inducing further encroachment. State regulation is no panacea for these ills, but it is a partial remedy deserving of wider use. Singly or in combination, zoning, building regulations, and subdivision regulations are fruitful devices for promoting the effective use of flood-plain lands. Sooner or later, comprehensive programs which seek to reduce flood damages may be expected to include such regulation as well as the traditional measures of flood control and flood protection.

Disastrous floods in recent years have inspired a new and widespread recognition of the contributions which zoning and other regulations can make to halting that encroachment which increases the flood hazard, to preventing new uneconomic uses of flood plains, and to readjusting present unsatisfactory uses.[1] State, county, and municipal agencies have been active in the drafting and enforcement of regulations. It is too early and the experience is too fragmentary to attempt any generalizations with respect to the activities of local governments. However, state regulation has been practiced sufficiently long so that it may be appraised. In the long run, county and municipal zoning of land use probably will have the more profound effect upon human adjustment to floods, but state regulation of encroachment is a tried and relatively simple procedure which can be expected to yield limited results more promptly.

A review of experience with regulation in three states suggests that state flood-plain regulation of the type in force in the states of New Jersey and Washington deserves consideration by other states. It further suggests that the Federal Government may have cogent reasons for making the enactment of such state legislation a condition of additional federal contributions to flood control.

Channel-Capacity and Land-Use Regulations

Regulation of flood-plain use may serve either or both of two objectives. First, it may limit land occupance which causes a constriction of the natural stream channel. This may be called "channel-capacity" regulation. Dumping of waste, construction of bridge approaches and abutments, and construction of highways may result in a decrease of channel cross-section, a consequent reduction in water-carrying capacity, and an increase in the height of flood flows. A riverside fill may cause an increase in the flowline of flood waters on the opposite side of the channel. A railway crossing may back up flood waters for distances of a mile or more upstream. An oil tank constructed without proper anchorage may break loose in time of flood, lodge against a bridge downstream, and cause pooling of water. Zoning measures or building regulations may be employed to prevent such structures to the extent that they cause an increase in the height or duration of floods.

Second, regulations may limit the use of a flood plain to purposes which do not suffer unduly from the action of flood or which do not cause serious damage to persons located outside of the flood plain. This may be called "land-use" regulation. The objective here is to prevent or discourage occupance rendered uneconomic or contrary to the community welfare by the flood hazard. In only a few cities in the United States does a flood plain constitute the only economically feasible location for residences. On the other hand, many manufacturing establishments must be located within the range of floods

[1] New York, Division of State Planning, "A Common-Sense View of the Flood Problem," *Bulletin 28*, May, 1937; L. Segoe, "Flood Control and the Cities," *American City*, March, 1937, pp. 55–6; George H. Gray, "State Zoning of Waters," 2 *Planners' Journal* 128–9 (Sept.–Oct., 1936); Henry C. Klein, "Flood Plain Zoning and Evacuation," *Quarterly of National Fire Protection Association*, April, 1939.

in order to utilize assets of low land and riverine location. Zoning ordinances may be employed to prevent new residential use, to encourage the evacuation of a residential area over a long period of time, and to limit new manufacturing and commercial uses to ones requiring the advantages of the flood plain.

The two objectives are combined in some regulations, and are independent in others.

Status of State Regulations

Most of the effective flood-plain zoning activity in the United States has been accomplished by the states. The cities have utilized it in a few instances. The powers of Federal Government to promote zoning have not been exercised as fully as they might.

New Jersey. New Jersey provided for channel-capacity regulation under authority of its so-called Home Rule Act of 1917, as amended in 1929. That act provides that every municipality in the state may make and enforce ordinances for the purpose of "The defining of the location and the establishing of widths, grades and elevations of any stream, creek, river or other waterway, and the preventing of encroachments upon the same."[2] Counties of the second class have substantially the same powers, and the State Water Policy Commission is empowered to prescribe conditions under which the erection of any new structure or renewal of existing structure may be permitted within the natural and ordinary high water mark of any stream.[3] The Commission also is authorized to require the removal or repair of such existing structures in the interest of the public safety. Encroachment lines adopted by the municipalities and counties are subject to approval by the Commission.

The State Water Policy Commission performs two interlocking functions. First, it issues permits for construction or alteration of bridges, culverts, walls, fills, and other structures throughout the state.[4] Second, it makes intensive surveys of individual streams looking to the setting of encroachment lines and the preparation of specific plans for channel improvement. Ideally, the surveys should be completed before action is taken on applications for permit to build or alter structures. Practically, the Commission must act on many applications on the basis of office or reconnaissance studies of channel and run-off conditions.

The law affecting Commission authority has been construed to include all classes of structures, principally bridges and channel changes, walls, pipe crossings, and buildings. The Commission is in a position to prevent any new invasion of flood plains in so far as it can prove that such invasion would increase the danger of flood damage or would injure the public welfare in any other way. It apparently lacks authority to control dumping of refuse.

In order to establish the encroachment lines necessary for the administration of such duties, the Commission has sponsored detailed surveys of streams. It has been aided materially in some areas by the WPA Waterway and Riparian Survey sponsored jointly with the State Department of Commerce and Navigation. That basic survey provides a large-scale map showing all structures in and along a stream, an accurate profile of the stream, and a series of cross-sections of the stream channel below or slightly above the extreme high water mark.

The detailed encroachment surveys have been made in cooperation with county and municipal governments for Assunpink Creek, Green Brook, Elizabeth River, Rahway River, Pequest River, Wallkill River, and Second River. For each stream, encroachment lines have been established beyond which the Commission will not permit construction. Also, plans for channel deepening, straightening, and widening and for floodwall construction have been prepared. Detailed studies were made in the Passaic Basin without setting encroachment lines.

At this writing no lines have been adopted by municipal ordinance, although many of the recommended improvements have been constructed by county or municipal governments or by property owners. The lines are generally recognized by the responsible local officials; delay in formal acceptance has occurred in the municipal councils.

In addition to providing a basis for the issuance of permits by the State Water Policy

[2] Rev. Stats., Title 40, c. 56–1 (k) as amended by Laws 1938, c. 229.

[3] *Ibid.*, Title 58, c. 1.

[4] State Water Policy Commission, *Information for applicants for permits for construction or alteration of encroachments on streams, bridges, culverts, walls, fills, and other structures* (Trenton, 1938).

Commission, the surveys are used by state and local officials as a guide to (1) removing channel obstructions such as sewer crossings, (2) constructing retaining walls and other channel-improvement works, (3) asserting title to the natural stream bed, and (4) advising property owners on desirable limits of improvements. The authority of the Commission has not been questioned in the courts. Neither has the state paid any damages for removals or alterations required by it. The entire process seems to have been a cooperative one in which acceptance of the principle of staying out of the stream channel has been gained by education and skillful negotiation.

The Commission has required the design of bridges and culverts with capacity adequate to pass the probable maximum flow safely. It has not set encroachment lines at the limit of the estimated maximum flood. In general, floods of 15- to 25-year frequency have been used in calculating desirable channel capacity, thus leaving available for unrestricted occupancy many flood-plain areas which are inundated at less frequent intervals.

The administration of this legislation to date has barred those major encroachments on normal stream channels which result from construction of dams, bridges, roads, and the like. It has reduced somewhat the amount of encroachment by new buildings and filling. It has provided a legal and factual basis for channel-improvement activities by municipalities. It has not resulted in any major readjustments in land use in flood plains, nor has it been used to restrict new and uneconomic land uses which do not cause appreciable changes in stream regimen or stage.

Pennsylvania. Authority to regulate stream-channel encroachment also is vested in state and municipal agencies in Pennsylvania. The State Water and Power Resources Board is authorized to issue permits for the construction of any water obstruction in any stream or body of water or for any other action changing or diminishing the course, current, or cross-section of such water bodies.[5] If the Board determines that any obstruction is unsafe or in any way is "derogatory to the regimen of the stream" it may require the repair or removal of the obstruction as may be appropriate. The Board of Commissioners of Navigation for the River Delaware retains its power and authority over that river and its navigable tributaries but does not now exercise such authority.[6] All Pennsylvania cities may, with the consent of the Water and Power Resources Board, establish encroachment lines by ordinance, and may prevent or remove all encroachments "as threaten to or do injure the city or the property therein."[7] They may remove obstructions at the expense of those who cause them, may condemn property or materials as may be necessary, and may enter proceedings at law or equity for the purposes set forth.

The Board has established encroachment lines in several cities and localities, but it has confined its activities chiefly to the inspection of dams, bulkheads, and other structures projecting into the normal stream channel. It reviews approximately 600 applications for permits annually. In setting encroachment lines the major cities and localities affected have been the Schuylkill River in Manayunk and in Reading, the Susquehanna River at Wilkes-Barre, the Shenango River in New Castle and Sharon, Codorus Creek in York, and Connoquenessing Creek in Butler. In rare instances only has it attempted to regulate land occupancy in those portions of the flood plain located above the level of mean stream discharge.

During 1937 it undertook a special survey of the extent to which there has been occupation of those beds of streams or lakes title to which is in the Commonwealth.[8] This latter survey seems to have been inspired by the knowledge that there has been widespread use of channel lands by persons who pay neither rent nor taxes. The study was aimed at recouping property rights of the Commonwealth, and it may also have revealed the extent to which the natural stream channels have been built upon or filled in, but authorization was repealed and no report has been issued.

Although the powers of the municipalities are much more broad than those of the Board, the latter body has review power over action by the municipalities and it is in a position to guide zoning of flood plains on a

[5] Act of May 6, 1937 (Pamphlet Laws, 555), §§ 1–3; Act of June 25, 1913 (Pamphlet Laws, 555), §§ 1–10. Act of June 12, 1931.

[6] Act of June 25, 1913, § 10.

[7] Act of June 23, 1931, Art. XXXIV, § 340.

[8] Act of July 2, 1937. Repealed May 25, 1939.

state-wide basis. In many instances, such as the establishment of channel lines for the Shenango River in the City of New Castle, the Board's engineering staff has made the necessary surveys for the municipality, which in turn adopted the lines by ordinance.

The progress made under the above mentioned legislation in Pennsylvania differs in minor degree from that in New Jersey. Pennsylvania has not made basin-wide surveys, but it has established many encroachment lines by government action in important urban areas. Like New Jersey, the zoning has been restricted to preservation of channel capacity. No effort has been made to exercise the implied power to limit new occupancy which does not cause a marked change in stream regimen or stage, but which would be injurious to the public welfare.

Washington. In 1935 the State of Washington authorized its Supervisor of Hydraulics to establish "Flood control zones" on all streams in the state and to issue permits necessary to control the erection, operation, or maintenance therein of any structures which might "adversely influence the regimen of a stream or body of water or might adversely affect the security of life, health and property against damage by flood water."[9] The submission of applications for permits is mandatory. The State Supervisor is given ample powers to enforce his regulations. By May, 1940, 14 flood control zones had been established, more than 100 permits had been issued, and no appeals had been made to the courts.[10]

As interpreted by those persons responsible for its administration, the enabling act does not provide for the prevention of new urban or rural occupancy on flood plains. It is directed at channel-capacity zoning primarily. It applies only to new structures, and will be of service chiefly in preventing further encroachment. In time it may be used to bring about gradual changes in land use, because as existing works and structures become obsolete, they may be replaced only in conformity with state regulations.

New York. As a part of its revision of state planning laws in 1938, the State of New York provided that planning boards should take into account peril from flood in determining whether or not the land in plats for new subdivisions can be used safety.[11] This authority could be used by the local boards in preventing new residential building in areas subject to important flood losses. It does not vest supervisory power in a state agency, and it leaves the exercise of subdivision control with the local boards. It is, however, a clear recognition by the state of the need for curbing further unwise occupancy of flood plains.

Other States. The writer is not aware of important efforts to regulate flood-plain use in other states. In a number of states, notably Maryland,[12] state agencies are authorized to investigate waterway obstructions and, if necessary, to order their repair or removal. In other states, notably Wisconsin,[13] the counties have such authority. That authority may be used to regulate the construction of certain structures which would affect stream flow, but it has not been used generally to set encroachment lines or to establish zones. The Wisconsin counties possess broad powers to determine areas in which "trades and industries, and the location of buildings for specified uses may be prohibited."

County and Municipal Regulations

The fragmentary data at hand reveal that a few local governments have used the police power to regulate flood-plain encroachment. Outstanding examples are the zoning ordinance for Jefferson County, Wisconsin;[14] the zoning of the California section of Cincinnati, Ohio;[15] the zoning ordinance for parts of Los Angeles County, California;[16] and the building ordinance for Keene, Connecticut.[17]

[9] Session Laws 1935, c. 159.

[10] P. Hetherton, *Flood Damage Prevention*, Washington State Planning Council (mimeo), May, 1938, p. 3; Letters from Chas. J. Bartholet, State Supervisor of Hydraulics, August 23, 1937 and July 14, 1940.

[11] Wayne D. Heydecker, "Recent Amendments to New York State Planning Laws," 4 *Planners' Journal* 91–3 (July–Aug., 1938). The new laws are: Laws 1938, c's 44, 205 and 264.

[12] Cumulative Supplement to 1924 Maryland Code, Art. 96B, § 9.

[13] Wisconsin Laws 1935, c. 303, § 1.

[14] J. M. Albers, "New Uses for County Zoning: The Jefferson County, Wisconsin Ordinance," 14 *Journal of Land & Public Utility Economics* 460–2 (Nov., 1938).

[15] *State ex rel. Bateman v. Zachritz, et al.*, 22 N.E. (2d) 84 (1939).

[16] Additions to Ordinance No. 1494 (new series) authorized by the Board of Supervisors, June 11, 1940.

[17] *American Land Co. v. City of Keene (Conn.)*, 41 Fed. (2d) 484 (1930).

The opportunities for using zoning measures to regulate flood-plain use in municipalities are great. In the few instances which have been studied, the application of zoning to areas of flood hazard has comprised much more than channel-capacity regulation. It has regulated land use from the standpoint of safety of health and property.

To date, the state regulations have been directed chiefly at channel capacity and the county and municipal regulations at land use in a broad sense. The state work has been a fundamental step; without it the channels may be subject to progressive constriction. At the same time, uneconomic encroachment in the higher portions of the flood plain may be expected to spread so long as zoning and building ordinances do not limit building in the path of floods.

Extension of either type of regulation is difficult and should proceed with caution. Even the relatively simple process of channel-capacity zoning has encountered serious obstacles.

Obstacles to State Regulation

The chief conditions which retard the regulation of flood-plain use appear to be as follows:

1. Data relating to flood magnitudes and frequencies are so scanty in many areas that it is difficult to establish the flow line of the probable maximum flood. Moreover, topographic maps are lacking for numerous valleys.

2. Studies of land utilization in the flood plains are even more sparse, and it therefore is necessary to draft regulations affecting future land use without adequate appraisal of the factors making for encroachment. Zoning implies a plan to be executed in part through restrictions. Few cities have master city plans. Without such plans, channel-capacity zoning may be undertaken with a fair degree of success inasmuch as there commonly are no competing uses, but land-use zoning may be initiated only with impunity.

3. Present or prospective land users in the flood plain exert strong pressure against any measures calculated to limit their choice of land use. The real estate subdivider hopes to sell cheap flood-plain land at a profit for residential use. The manufacturer wishes to reap the benefits of riverine location. It may be profitable for the latter to locate within the reach of high waters, but in so doing he may induce an accompanying residential and commercial occupance which is not economically justified. A long period of education and negotiation may be necessary before public acceptance of the idea of keeping out of the way of floods is obtained in some areas.

4. There is little legal precedent for utilizing the police power of the state in order to prevent or restrict uneconomic land use which does not affect channel capacity. The issue has not been raised clearly, and there is a natural reluctance to proceed without further definition of the authority resting with the states.

5. The relation between costs and benefits of flood-plain location change with the economy of an area. In Cincinnati, for example, it once was essential to locate warehouses on the river bank in order that they might be accessible to the river carriers. Now, the rail carriers have superseded water carriers in relative importance, and the need for concentration of warehouse facilities has shifted. These are questions with which the municipalities often are better able to deal than the state agencies.

Needed Action

None of these obstacles is insurmountable. Regulation of flood-plain use is practicable in many instances. It is capable of wide expansion.

We may look forward confidently to a time when no new structures which restrict channel capacity will be built. We may hope for a time when only that new occupance which will reap benefits of flood-plain location substantially greater than the resulting flood damage will be permitted.

State regulation of channel capacity is known to be practicable. As a simple and basic step toward furthering the most effective use of flood plains and reducing flood losses it is deserving of trial in other states. The obstacles to efficient administration do not seem sufficiently large to warrant further delay in the consideration of legislation having the same objectives as the New Jersey and Washington statutes cited above.

If the desirability of channel-capacity regulation has indeed been demonstrated, it would seem appropriate for the Congress in turn to consider means of promoting such action by the states. It has been suggested, for example, that a condition of federal par-

ticipation in flood control should be agreement by the states to enact legislation designed to control further encroachment.[18] Legislation of that type would tend to prevent an increase in the already serious flood problems of the United States. It is needed urgently to halt the encroachment which may be expected to follow the protection afforded by the federal program for construction of flood-control reservoirs.

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[18] Resolution of the United States Flood Control Federation, April 9, 1937.

Extended Functions for Institutional Landowners

INSTITUTIONAL landowners referred to here are credit institutions that have become owners of farm land taken in satisfaction of mortgage debt. This rules out all land held by charitable, correctional, and other fully tax-supported institutions of county, state, or nation. These institutions hold adjacent farm land mainly to enable inmates to share in growing products for direct use within the grounds, disregarding occasional surpluses for marketing. In accordance with this purpose, there is little if any resort to outsiders to operate this land on a rental basis and seldom, if ever, any effort to sell to outsiders any of the land. Significant as these institutions are as permanent operating landowners, they have no shares of stock available to investors, like mutual and other corporate institutions that have entered farm land ownership through making mortgage loans. Also they make no use of public funds to lend to farmer borrowers. Incorporated lenders, on the one hand, and private and mutual lenders partly or fully supplied with state or federal capital, on the other, are the center of attention in the references that follow.

Debt-acquired farm realty held by institutional landowners during the peak year, 1937, has been estimated for the country as a whole at $1,059,000,000 and for 1939 at $1,019,000,000. The proportions held during the period 1937–39, by types of institutions, were as follows: life insurance companies, 70%; federal land banks and Federal Farm Mortgage Corporation, 14%; three state agencies (Rural Credit Board of South Dakota, Bank of North Dakota, and Department of Rural Credit of Minnesota), 7%; joint stock land banks, 5%; and active insured commercial banks, 4%.[1] Although no attempt is made here to compare the volume of debt-acquired land held by institutional lenders with that held by individuals who became owners by first making mortgage loans upon farms, it is interesting to note that, for at least a decade prior to 1921, over ½ of the loans recorded were by individuals but that from 1921 to 1932 only between 2/5 and ½ and from 1933 to 1939 probably only about ¼, on the average, were so recorded.[2] It is likely, of course, that some farm mortgage lenders recorded as individuals were to some extent representatives of commercial banking institutions. To what extent natural persons, by contrast with corporations, have taken over farm land in satisfaction of mortgage loans is beyond the direct purview of this treatment. Probably, however, results of an experimental policy involving only institutional owners, in the first instance, would be no less significant if obtained in like manner on land taken over by mortgagees of the non-corporate type, especially where such mortgagees have the resources in brains and funds to undertake active programs in rebuilding farms.

The thesis suggested here is that those taking over farm land in satisfaction of mortgage debt should be expected, where they have financial and managerial capacities, to rebuild the properties acquired and that an adequate predetermined period of possibly as much as 6 to 10 years should be allowed them to hold any particular farm or tract back from resale to natural persons until the rebuilding schedule for the farm or tract in question is well advanced. How to organize the social control mechanism to protect the public that might open up this

[1] "Small Decline in Farm Real Estate Holdings of Leading Lending Agencies in 1938," 2 *Agricultural Finance Review* 50 (November, 1939).

[2] Harold T. Lingard, "Lender Distribution of Farm Mortgage Recordings, 1910–39," 3 *Agricultural Finance Review* 25 (May, 1940).

opportunity to qualified institutional owners becomes a problem for individual states.

As an indication that prompt liquidation of debt-acquired farm properties has not always been forced upon some institutional owners, consider some data recently made public. Twenty-six life insurance companies, whose holdings of farm properties seem to account for over ¾ of all life insurance holdings of that sort at the end of 1938, had held 30% of their farm properties for over 5 years, 33% between 3 and 5 years, and 37% less than 3 years.[3]

Apparently all commissioners of insurance and corresponding state officers have not demanded of all institutional takers of farm properties that they sell these properties to natural persons within periods as short as two years. Conditions of the real estate market have warranted avoidance of routine time limits. Nevertheless the possibility that liquidation might be forced either as a result of home-office pressure or pressure by state officials has been present. Prompt, even comparatively sudden, liquidation might at any time be invoked upon many acquired properties. It is assumed here that arrangements might be perfected whereby farm rebuilding, now all too often of a merely superficial type emphasizing paint and a few obvious repairs to fences and buildings, might become an important function of the real estate departments of institutional landowners. In fact, institutional landowners, which might otherwise be disposed to take over run-down properties and give them a minimum dash of superficial conditioning prior to sudden resale, might be placed upon probation as to their fitness to continue as lenders in some states after these states have demonstrated that they could provide these institutions opportunities for genuine rehabilitating activity.

Farm landowning corporations[4] may be considered in three groups: (1) those that have permanent ownership of the same farm tracts, with or without corporate operation of them, as their main purpose; (2) those that have more or less permanent ownership of farm tracts as incidental or collateral to one or more other purposes; and (3) those that have temporary ownership of farm tracts as either a temporary or regular incidental or contingent function of the corporation. Institutional owners of farm land belong in the third group and the enlarged functions proposed for them are not designed to transfer them into either of the first two groups. Issues involved in giving a corporation a permanent relation to any tract of farm land, even land raising canning crops and other products for a corporation specializing in processing activities, are worthy of a treatment beyond the scope of this article. The proposal here for extended functions for institutional landowners stops far short of converting these agencies into corporate landlords or direct operators holding permanent relation to any farm. By contrast, the proposal is to provide for what might be called an "improvership" period within which the corporation can prepare for liquidation of any acquired farm property after rebuilding it.

Social Control of Corporate Rebuilding of Farms

The basic elements suggested for a measure to control corporations owning or operating farm real estate should include the following:

A. Ownership of any particular tract of farm land, with or without direct operation, should be confined to a maximum of 8 to 10 years, under the most approved conditions.

B. After not to exceed two years from the time when the control measure goes into effect, the right of such a corporation to continue in ownership of any particular tract of farm land beyond the third year following its acquisition of clear title should be limited to those companies and tracts which have met certain requirements. Certificates should bear witness to three sets of facts and should be acceptable to a state commission composed entirely of recognized specialists in agricultural science and practice. These should include the dean of the college of agriculture and director of the agricultural experiment station and extension service, or

[3] Securities and Exchange Commission, *Operating Results and Investments of Twenty-Six Largest Legal Reserve Life Insurance Companies in the United States, 1929–1938*, a statistical report submitted to the Temporary National Economic Committee in 1939. See also statement entitled "New Data on Farm Mortgages and Farm Real Estate of Life Insurance Companies," 3 *Agricultural Finance Review* 34–5 (May, 1940).

[4] For many years reports of the U. S. Commissioner of Internal Revenue have shown about 8,000 farming corporations in the United States. Many of these have held a permanent relation to the same tracts of land.

someone designated by him or them, and not to exceed four others, whose grade of training and experience should be equal to that of accredited farm managers and accredited rural appraisers in the American Society of Farm Managers and Rural Appraisers.

1. Little severe deterioration in the soil should have occurred after acquisition by the company, so far as such deterioration may have resulted from preventable erosion or from plans that lacked proper emphasis on soil-building crops and on livestock.

2. Plans for future rehabilitation or development of the land should have approval of the commission.

3. There should be evidence that the farmstead occupied by the tenant family operating for the corporation has a degree of suitability. As compared with the average of the one-half better-equipped, tenant-operated farm properties having residences located in the same township, the building to be occupied as residence shall be rated as equal or better. Points to be counted in this comparison should include: (a) amount of enclosed floor space; (b) security against storm and cold; (c) supply of drinking water for men and animals; (d) facilities for storing soft water for household uses; (e) facilities for sanitation and privacy; and (f) if within ½ mile of established electric and telephone wires, provisions for use of electric current in lighting and other ways, and for telephone service. Likewise, the buildings to be used for livestock and poultry should provide shelter for a number of work animals, cows, and other livestock equal to that found on the average of the one-half better-equipped farms under tenant operation in the same township.

Relations between Farm-Rebuilding Corporations and Tenants

In the relations between the institutional owner and the tenant the following fundamental principles[5] should be applied:

A. Leases should be so drawn in writing as to provide a careful consideration of the responsibilities of both tenant and corporate landlord. Corporations have sometimes dealt with their tenants through representatives who could be suspected, however properly or improperly, of having axes of their own to grind, possibly obtaining a percentage or other rake-off as a result of causing supplies to be purchased or products to be sold through channels of their selection, or possibly presuming to be able to obtain for a tenant a lease renewal or other concessions for a fee. Under a developed plan the corporation should give assurance that, on request either of the tenant or any member of the state committee, its position relative to such matters shall be submitted to the tenant in typed communications of which a carbon copy shall be filed with the state committee.

B. Adequate provision should be made for soil conservation and improvement. Owners of liquidation farms can be expected easily enough to place emphasis on superficial improvements. Serious question can be raised as to whether it has always been wise, even in the retrospective view of temporary owners of acquired farms, to neglect basic improvements as much as has often been done. As realty-liquidation programs are replaced by rehabilitating programs, not only superficial but fundamental conservation and improvement are sought. Liming may then be supplemented by more far-reaching use of soil amendments. Erosion control by construction of terraces and dams and by use, where economical, of strip farming and other practices may be given a place of larger importance. Like other landlords, corporate owners may need to take smaller shares of the product where tenants inaugurate somewhat more costly methods of farming. More livestock and livestock products produced for market may be an item in soil conservation and improvement.

C. At intervals of not to exceed two years the contributions of the landowner and tenant should be reexamined in the interest of equitable distribution of receipts and expenses.

D. After a tenant has proved himself a good farmer, security of tenure should be evidenced by use of a lease which continues from year to year unless notice is given of its termination, such notice to be given six or eight months before the close of the lease year.

E. Arbitration should be arranged in anticipation that differences may arise between the landlord and tenant, each side agreeing to choose members for a small committee or each naming someone to select such a committee.

[5] H. C. M. Case and Joseph Ackerman, "Our Farm Tenancy Problems" (mimeographed), University of Illinois College of Agriculture, May, 1938, and "Farm Leases for Illinois," *Circular* 474, June, 1937 (reprinted January, 1938), emphasize all but points H and J, although the amplification under points A, B and I is not included in the publications cited. See also "Farm Tenancy in the United States, 1918–1936" (*Bibliography* 70, U. S. Bur. of Agric. Econ., June, 1937), especially Leases and Leasing Systems and related index sections for a fairly complete listing of all federal and state publications on farm-lease contracts.

F. Farm leases that provide for payment of stated rents might carry provisions for shift to a sliding-scale basis in case of sufficiently marked changes in prices of farm products and variations in production resulting from conditions not under the tenant's control.

G. Agreement should be recorded by the landowner that, where lien is taken on the tenant's property, it shall not exceed an agreed percentage of the gross value of products of the current year.

H. Farm leases of whatever form should provide that agreed percentages of rents paid, or agreed percentages of rents paid above a specified amount per acre, should be applicable as credit toward the purchase price if a farm is acquired from the landlord.

I. Lease-end, landlord-tenant settlements of more than ordinary completeness should be made when any tenant ceases to be in tenant relation to any tract held by a corporation on a rehabilitating basis. Compensation to tenants for unexhausted improvements and disturbance and to the owning corporation for deterioration for which the tenant is responsible should be established on simplified lines consistent with British experience but with full adaptation to American conditions. Compensation at rates in excess of the minimum required under whatever statutory enactment might be made should be permissible with the approval of the official state committee, but no permission should be given to contract out from under the law or regulations connected with it. Cooperation with any county or other landlord-tenant commission established is to be assumed.[6]

J. In reverse order of operation, tenants of a tract acquired by a corporation after passage of the measure and subsequently offered for sale should be offered refusal opportunity to purchase such land. The terms of transfer should be no less favorable than those on which the company can prove it has opportunity to sell, except that, to allow for extra expense of negotiation, possibly 1/5 of 1% might be added to the selling price if a former tenant elects to take the place of an imminent purchaser. Sale of such land to a person other than the latest or the next to the latest tenant should be validated by filing with the state commission certificates evidencing that acquisition was refused by said latest and next to latest tenants or that advertising in county newspapers during a previous period of two weeks had brought no inquiry from said tenants. A tenant not in farm operation for two or more years may be excluded from the benefits of this arrangement if the vendor so prefers, but the widow of a deceased tenant, if mature sons or sons-in-law plan to join her in further active participation in farming operations, should have the same rights as the tenant would have, if living.

Why Suppose Suggested System Worth Attention?

The above summary of possible features in a control measure, tentative as it is, calls for certain comments:

The movement toward security, old-age provisions, etc., is tending to multiply the volume of accumulations seeking investment, and can be expected to increase the interest of insurance officials, at least those outside government agencies, in farm land ownership on a rehabilitation-turnover or other basis as a supplement to farm real estate lending.

The resources of some creditor agencies are such that they can support the financial requirements for promptly initiated and vigorously prosecuted programs for stopping soil depletion on acquired tracts, for wise land use, application of purchased fertilizers, repair and construction of needed buildings, terraces, fences, etc.

The contacts of and resources available to officials of such companies are, or easily can become, such that they can maintain a staff of representatives informed by training and experience in sound methods of agricultural science and practice, and fitted to interpret to the home office the sound needs for practical tenant operation.

Important services could be rendered to agricultural production by such companies, operating under controlled conditions, by taking advantage of opportunity for successive rehabilitating activities on many tracts of land.

The presence of tracts on which large corporations might be practicing approved revamping activities would be helpful in showing concretely to owners of other rented

[6] For a proposal for county landlord-tenant commissions, see H. W. Hannah and Joseph Ackerman, "Legal Aspects of Farm Tenancy in Illinois," Ill. Ag. Exper. Sta., *Bulletin 465* (April, 1940), p. 267.

farms, and to operating owners as well, what can be accomplished by consistent efforts toward farm restitution and improvement.

In the absence of a licensing plan a trend toward institutional ownership may be regarded as a trend toward permanent ownership of individual farms by corporations This may lead to hostility to corporate land ownership.

Provision for landlord-tenant compensation, made specific for corporate-owned tenant land, could be drafted with an eye to possible use on farm land belonging to non-corporate owners as well. This might apply to non-corporate owners who are non-residents of the state and to residents of the same state where the percentage of rents plowed back into improvement of land and buildings in the preceding three years or more has reached too small a figure.

Tax Influence on Corporation Activity in Agriculture

The suggestion offered here that a turnover type of farm-realty development be given a larger place in the functions of corporations raises questions as to which corporations might be expected to find such activity profitable.

Taxes on corporate incomes would not rule against federal land banks and state lending agencies engaging in rehabilitating programs, but bank officers are more likely to prefer to reduce their holdings rather than to launch on a long-time program of investment in farms. The temptation for any unwilling owner to get rid of the most inferior of the farms taken in satisfaction of debt is a strong one, and this does not always produce large amounts of resources for developmental programs on superior holdings. Having used as much federal treasury money as they have in building their capital structure, it is not likely that federal land banks, for example, will feel free to tie up capital in longer-time real estate ownership.

Among non-governmental corporations it is likely that real estate developmental programs for sale to farm-family purchasers will not make equal appeal. Some corporations organized primarily for agricultural purposes have found it possible to keep going even against a corporate net income tax rate as high as 12½%. These corporations are mostly in lines of production where large-scale investment is necessary, as, for example, in intensive fruit, vegetable, and seed production, in large-scale ranch and other types of production, including rice, sugar, etc. In horticulture and in certain types of other capital-intensive farming, the aggregating of large amounts of capital for basic specialized purposes, including planting of trees, application of fertilizers and sprays, construction of sorting, packing, and precooling facilities, and the use of high-grade specialists and managers, naturally point toward corporate ownership and operation. Considering the whole of American agriculture, however, it is not to be wondered at that corporate operation has been generally unsuccessful and corporate ownership has been often brought to dissolution. In many non-agricultural fields as, for example, in public utilities, corporations are almost indispensable. The assistance that limited liability gives to corporations in raising funds is often very great. In most agricultural communities, however, individual families have diversified resources for keeping up the struggle to hold a home farm and can command more loan capital on the same real estate security and, if no more deeply indebted than a corporation, can hold on longer against a period of low returns than can a main-purpose agricultural corporation trying to deal permanently with the same land. Not the least of the factors in giving the edge to family farms against main-purpose agricultural corporations is the fact that each family head has an income tax exemption, whereas the corporate form of organization pours all its income through a single funnel, where, in years when there is taxable income, the flat 12½–18% levy applies with no exemptions analogous to those of heads of families.

At this point the position of insurance companies as payers of income taxes differentiates them from corporations deriving and disbursing funds in ordinary purchases and sales of agricultural and other commodities. Insurance companies have a trustee function for policyholders. Many are organized as mutuals. In actual practice, the gross investment income of life insurance companies is subject to so much deduction that net incomes subject to corporate income tax levies are small. Taxes on real estate are payable by federal land banks, insurance companies, and all corporate holders except governments themselves, but taxes on cor-

porate income from farm-realty investment are assessed only on non-government corporations having such income. The fact that the tax load per thousand dollars of gross investment income received by insurance companies, whether from farm realty or other sources, is lower than that to which other non-government corporations are subject, enables insurance companies to undertake farm real estate activities that would be less likely to pay out, if undertaken by other non-government corporations.

Although certain corporations not organized primarily for agricultural real estate ventures may carry on certain developmental programs more successfully than corporations organized primarily for agricultural purposes, it is not to be assumed that federal and state taxes on the more strictly agricultural corporations have been too high or too low. Even if a decade of successful farm real estate rehabilitation by insurance companies were to demonstrate that such programs were good for agriculture as well as for policyholders, the question whether agricultural corporations and other corporations, if following farm-realty rehabilitation programs, should have their federal income taxes and other taxes reduced would remain in about the same position as it has been. It seems unwise to give special tax reductions to purely agricultural or other corporations on income from farm land in process of rehabilitation pending transfer back to farm families. Such tax reduction for temporary and special service to successive farms might seem to be an opening wedge to permanent ownership and operation of the same land, with damaging effects to the family-farm system. Certainly only those corporations should be permitted to own and operate farm land that can do so and still pay the same rates of taxes as they would have to pay on income from other types of investment. Although this may hold corporations to a narrow scope when it comes to permanent association with any stated acreages of farm land, unreduced taxes on permanent corporate ownership and operation of farm land seem to be clearly in the fiscal interest of the public treasury and socio-economic interest of agriculture.

To permit institutional landowners to put through reconstruction programs for acquired farms which they might otherwise regard as merely liquidation farms lacks much of compelling these owners to continue ownership. There must be confidence on the part of company officials that reconstruction of farms would pay, before these companies would try to qualify as licensed temporary landlords. Education would be necessary before some of the more conservative company officials would be ready to venture upon long-time plans for rebuilding farms for profitable sale to private farming families. It merely seems that a state prepared to grant the privilege to institutional landowners to build up farms under license before they sell them might find at least a few companies ready to take a chance. The instinct of workmanship is strong in the leadership of some of these companies, and for all connected with such companies to be able to point to a series of farms that were given a new lease on economic life as a result of the company program might seem to be worth the hazard, especially where the extent of the hazard has already been at least roughly measured in recent company experience.

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Indexes of Construction Cost for Public Utility Industries

OCCASIONALLY in rate cases index numbers of prices or construction cost have received consideration, a common purpose being simplification of valuation work.[1] In distinguishing the several kinds of such indexes, the following may be listed: (A) general price indexes of which there are many familiar ones; (B) general construction cost (price) indexes which have such special purposes as those being described in this article and which give a measure, for instance, of average construction cost of a kind of property or of a number of plants in an industry; (C) a construction-cost index for a particular plant or firm, a matter with which I have dealt elsewhere;[2] and (D) indexes of cost of a particular kind of property of a particular company, these being indexes that have been used often in appraisal work.

In the Chesapeake & Potomac Telephone Company case[3] the Supreme Court refused to approve use of a conglomerate of index numbers, a composite of Types A and B and predominantly the former, as a means of determining the fair value of the property. General price indexes certainly have no recognizable place in the making of appraisals of public utility property even though several commissions seem to have used them for this purpose.[4] But the Type C index may conceivably be constructed, if arbitrary weighting that irritated the Supreme Court is avoided, so that it receives judicial approval.[5] The last type of index is in common use by both commissions and companies for the purpose of appraising kinds of property, the index of one company's property being used when data are insufficient to appraise the same kind of property of other companies.

The other indexes, those for construction cost of public utility industries, are the principal subject of this paper. Even though the Supreme Court has not definitely discussed their use in valuation work, it is doubtful that they may be looked upon as suitable substitutes for property appraisals. Still, in fixing the limits of their use and despite crudities in the preparation of most or all of them, they may be of assistance in some phases of rate or earnings control. They may be, for instance, of at least minor significance in determining where rate investigations may be best undertaken or something about probable future property values.

Possible Uses of the Indexes

A well prepared construction-cost index for the property of a public utility industry may be used to obtain a first approximation of the reproduction cost of a particular plant or firm in the industry. In fact, two of the firms which prepare index numbers observe that no wide variation exists between the results of actual reproduction-cost studies and valuations computed with their general indexes. Consequently these index numbers could be a basis for questioning notable disparity in reproduction cost valuations of a company's property. With allowance for expansion or contraction of the plant, they might help to throw greater burden of proof on the company or its engineering firm to justify the avowed valuation.

These index numbers also might constitute a part of the scant information upon which commissions are apparently expected to estimate "future" trends of property values. The Supreme Court has said that " . . . it would not only be unfair but impracticable to adjust the value to sudden fluctuations in the price level"[6] and that " . . . an honest

[1] *West v. Chesapeake & Potomac Tel. Co.*, 295 U. S. 662 (1935). The Supreme Court encountered a similar procedure in *Ohio Bell Tel. Co. v. Pub. Util. Com. of Ohio*, 57 Sup. Ct. Rep. 724 (1937). See also *Re Southern Bell Tel. & Tel. Co.* (S.C.), P.U.R. 1933 B 181; *Re Conowingo Power Co.* (Md.), 10 P.U.R. (N.S.) 353 (1935); *Re Broad River Power Co.* (S.C.), P.U.R. 1933 C 351.

[2] C. E. Troxel, "Determination of Reproduction Cost with Index Numbers," 53 *Quarterly Journal of Economics* 105–19 (Nov., 1938).

[3] *Op. cit., supra* n. 1.

[4] Cf. *Re Coast Gas Co.* (N.J.), P.U.R. 1923 A 349; *Re Southern Bell Tel. & Tel. Co.* (N.C.), 7 P.U.R. (N.S.) 21 (1934).

[5] Cf. Troxel, *op. cit.*

[6] *West v. Chesapeake & Potomac Tel Co., supra* n. 1.

and intelligent forecast of probable future values, made upon a view of all the revelant circumstances"[7] is necessary. Perhaps such index numbers offer better data for this purpose than do the 2-, 3- or 5-year averages of past prices used by some commissions. They would provide a broader, weighted base for projecting such trends than would simple, unweighted averages of prices. At least they add to the available information according to which guesses about future reproduction-cost sums may be made. In no case, however, is there a basis for contending that either index numbers of past construction cost or averages of past prices provide an incontestable means of forecasting future reproduction cost or fair value. At best the task is a speculative and elusive one.

Furthermore, these index numbers may provide a rough guide as to where rate investigations are most needed. It may be presumed here that original cost data for each company's property may be obtained. But, aside from making appraisals, there may be no reproduction-cost data. Consequently, reproduction-cost indexes for an entire utility industry would afford a crude measure of reproduction cost for each company's property when there is some knowledge as to the times of property installations. Perhaps with these data of actual original cost and approximated reproduction cost, it could be decided, for example, whether Company A ought to be investigated before Company B or C. It would be a possible means of increasing the efficiency in use of the insufficient funds of regulatory bodies.

Finally, partly or wholly outside the regulatory sphere, such index numbers offer some general information about past investment conditions in the utility industries. They provide some indications about past changes in replacement cost, even piecemeal replacement. They reveal roughly the times when expenditures on plant replacement or expansion have been most or least expensive.

Description of the Indexes

The 15 indexes presented in Table I include most of the known, regularly maintained index numbers of public utility construction cost. Five of them are prepared by C. F. Lambert, and his are the only ones relating to the water and street railway industries. The only indexes for gas and electric properties rivaling those of Lambert are the Handy indexes. Although publication of the Richey index for construction cost of electric plants has been stopped, it is included because it may continue to be introduced into valuation controversies by the engineers who compute it. Indexes of the Interstate Commerce Commission for telephone and telegraph and manufactured gas property of railroad companies seem to be the least useful of the ones that have been assembled; they are presented here for want of any other index of telephone property cost and for comparison with other gas property indexes. Other ICC indexes, even those for parts of electric plants, seem to be more promising of usefulness. The general construction-cost index of the *Engineering News-Record* is presented because (1) it has been mentioned in several valuation controversies[8] and (2) it may have some worth for the purpose of comparison with the more distinctly public utility indexes.

This is scarcely the place for entering upon an exposition of the details of how index numbers should be constructed. But a word or two about the relation of the use of a construction-cost index for an industry to the method of its preparation may be pertinent. Disregarding the legal requisites of public utility property valuations, the preferable index of construction cost alone would take account of changes in construction methods, new kinds of equipment, productivity of labor, use of materials, profits of contractors, as well as changes in prices of materials and labor. Such an index would measure replacement cost without regard to the conditions surrounding past construction work. But this sort of index-number computation would be antagonistic—except for the chance of occasional approval of a Type C index—to the requirements of the Supreme Court for measurement of reproduction cost. If the thoughts of the Supreme Court are to be the matrix of the index, account ought to be taken merely of the changes in the prices of materials and labor. But most of these available indexes do not seem to have been prepared strictly in accord with the Supreme Court's views.

[7] *Los Angeles Gas & Elec. Corp. v. R.R. Com. of Cal.*, 289 U. S. 287 (1933).

[8] Cf. *Re Broad River Pr. Co., supra* n. 1; *Dept. of Pub. Wks. of Wash. v. Wash. Water Pr. Co.*, 4 P.U.R. (N.S.) 363 (1934).

Before giving a description of each maker's indexes, a few common characteristics of the indexes will be listed. First, it is not always possible to get a clear account of the procedure of index-number calculation. Possibly some of the lack of clarity is ascribable to the fact that engineers, who are more familiar with valuation than statistical work, prepare most of the indexes. Apparently all the indexes are weighted with some sort of valuation studies, the ICC indexes probably being most inclusive in this respect, and all of them probably contain a number of approximations of price data. Some indexes take account of technological changes in equipment and construction methods, but nothing is known of the process by which this is done. No mention is made anywhere of consideration for changes in such factors as productivity of labor and contractors' profits. According to available knowledge, going value, the value of other intangibles, and changes in land prices are disregarded in the calculation of all the indexes.

Lambert Indexes. Since 1925 these indexes have been prepared by Mr. C. F. Lambert, utility engineer of Miami, Florida. Prices of property items are obtained from quotations, bids, and governmental sources. Wage rates are obtained from the union scale in "about ten different cities," exclusive of Chicago and New York. The plants on which the indexes are based are geographically scattered, and some are appraised whereas others are designed. The indexes are the weighted-relative type, and the weighting, though there is no clear statement of the procedure, is apparently done according to the proportionate cost of items of property. But the weights are always changing, for Lambert, in order to take account of physical changes in plant construction, determines each year the value of a "representative" plant. Little more is known of this process other than that by estimating the cost of such representative plants in the base years, annual index numbers of construction cost are obtained.[9]

Handy Indexes. Although Lambert seems willing "to tell all," the firm of Whitman, Requardt and Smith, Baltimore engineers who have been continuing the work that was started by William Handy, are unwilling to divulge detailed information about the formation of their indexes. These indexes are prepared for five geographic divisions of the country, and for public utility buildings as well as gas and electric plants. Since there is a total of only 80 "items" in all the indexes for any district, some of the "elements" of a plant may not be represented in the indexes. Moreover, adequate price data may not always be available. The price relatives are weighted according to the proportionate cost of the property with which price series is associated, and apparently the cost data for such weighting are derived largely from the valuation work of the engineering firm.[10]

[9] These indexes are published annually in *Engineering News-Record*, "Construction Costs," McGraw-Hill. They are reported relative to both 1913 and 1926 as base years. The general composition of these indexes is as follows: electric, 25 plants, 84 items; manufactured gas, 25 plants, 63 items; natural gas, 15 systems, 58 items; waterworks, 25 systems, 68 items; street railways, 10 systems, 82 items. With the exception of street railways these data are classified into five groups: land, buildings, equipment, distribution, and miscellaneous. Because the value of land is believed to be "entirely a local condition," the index of land value has been kept constant. In connection with computation of the index of each year's "representative" plant—Lambert sometimes speaks, however, of an "average" plant—additions have been made from time to time to the number of plants in the sample. Because of the lack of homogeneity in the indexes, he recognizes that the index of one year cannot be compared, particularly for price changes, with the indexes of other years. (From correspondence with Mr. Lambert, and W. J. Graham, *Public Utility Valuation* (Chicago: University of Chicago Press, 1934).)

[10] Indexes (published annually in "Construction Costs," *op. cit.*) are prepared for: (a) public utility buildings (13 items, 1910–14=100)—reinforced concrete and brick; (b) gas plants (17 items, 1911=100)—total construction and equipment as well as mechanical equipment exclusive of gas holders; and (c) electric plants (50 items, 1911=100)—total construction, electric plant (steam), and substation equipment in each of the following regions: Atlantic Seaboard, North Central, South Central, Plateau, and Pacific. Prices of basic materials are obtained from the *Engineering News-Record*, *Iron Age*, and "other sources," these data being checked sometimes against "prices actually paid." Labor-cost data are obtained principally from the U. S. Department of Labor and the National Association of Builders Exchanges. Prices of plant equipment are obtained from "nationally known" manufacturers. When the indexes were first prepared in 1923, Mr. Handy gave some of the weights of the prices and stated that the indexes excluded land, working capital, and intangibles (81 *Electrical World* 859 (April 14, 1923) and 52 *Gas Age-Record* 451 (October 13, 1923)). But there seems to be no information on recent changes in the weights, attention to technological changes, or changes in price data.

TABLE I. CONSTRUCTION-COST INDEXES FOR PUBLIC UTILITY INDUSTRIES*

Year	Electric Plants—General			Electric Plant Parts			Gas Plants				Water Plants—Lambert	Street Railways—Lambert	Telephone and Telegraph—ICC	All Railroads—ICC	*Engineering News Record*—General Construction
	Lambert	Handy†	Richey	Electric Plant (Steam) Handy†	Power Plant Machinery—ICC	Substation Equipment—Handy†	Manufactured Gas—Lambert	Manufactured Gas—Handy†	Manufactured Gas—ICC	Natural Gas—Lambert					
1913	58.3		56.8				53.2	47.4		53.3	53.0	57.7			48.0
1914	56.0	53.1	54.0	53.1		57.3	51.3	46.9		51.9	49.7	57.5			42.5
1915	58.3	55.7	56.8	54.1	61.8	58.5	54.2	50.1	58.4	53.3	53.2	58.5	65.6	60.8	44.5
1916	71.6	68.4	72.2	59.4	67.7	59.6	70.7	60.2	65.9	64.2	68.3	67.0	79.0	66.3	62.2
1917	93.1	81.7	93.2	65.3	83.3	69.9	102.2	82.8	80.0	89.6	99.0	76.6	93.6	80.7	87.1
1918	101.7	94.4	99.4	76.9	103.2	83.1	107.8	93.3	94.6	104.4	110.1	91.8	100.6	95.8	90.9
1919	107.4	97.6	103.4	86.5	107.5	88.9	108.9	96.6	104.9	106.8	114.4	105.5	104.5	107.2	95.3
1920	118.8	106.9	120.0	95.5	112.9	94.8	123.3	109.9	115.1	117.1	135.1	135.0	122.3	128.9	120.8
1921	111.6	102.4	103.4	99.7	106.4	100.6	108.2	103.2	104.9	107.4	108.7	117.1	121.7	105.4	97.0
1922	100.0		92.6		93.0		96.3		95.1	91.4	93.1	104.3	103.2	94.6	83.8
1923	100.0	95.0	101.1	90.7	98.4	92.8	102.2	94.7	101.6	97.1	105.2	106.2	119.1	103.0	102.9
1924	99.3	101.3	102.3	98.1	99.5	102.3	101.4	103.5	102.2	99.4	106.4	103.3	114.0	103.0	103.5
1925	100.2	102.4	100.6	100.3	99.5	104.9	100.2	100.5	100.5	100.3	101.4	100.1	103.8	100.0	99.4
1926	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1927	98.8	97.9	99.4	98.9	100.5	97.1	96.8	97.7	101.6	97.4	92.6	99.1	103.8	98.8	99.1
1928	100.5	98.7	101.1	99.5	101.6	96.8	96.0	94.0	102.2	97.6	90.9	98.5	105.1	97.0	99.4
1929	103.8	102.9	102.8	105.3	102.9	98.6	97.3	94.3	102.2	97.9	95.4	97.8	105.1	96.4	99.5
1930	98.5	101.6	102.3	105.6	94.6	99.7	93.8	95.4	96.2	96.6	93.7	96.3	95.5	91.6	97.5
1931	92.1	99.5	93.8	105.0	89.6	102.0	89.3	94.3	88.1	93.8	88.2	89.4	87.9	86.1	87.1
1932	82.9	95.5	85.8	102.1	83.3	100.3	83.7	86.4	78.4	88.5	81.0	82.9	77.1	78.9	75.4
1933	87.6	93.1		99.5	83.3	97.4	86.1	84.4	80.0	89.1	84.8	83.0	75.8	76.5	81.8
1934	98.8	101.3		108.0	96.2	103.2	94.9	91.7	96.8	96.2	93.1	89.1	79.6	78.9	95.2
1935	98.0	103.2		107.4	96.2	105.4	95.6	93.1	96.8	95.7	93.7	88.4	83.4	78.9	93.8
1936	99.1	105.6		108.5	103.8	105.4	95.3	95.6	96.2	92.5	94.5	89.8	83.4	80.1	99.2
1937	110.4	114.9		115.6	110.8	112.0	105.3	104.4	96.2	99.7	104.3	98.0	86.0	85.5	112.7
1938	106.1	116.2		118.6		116.0	104.3	108.5		98.2	102.1	95.1			113.3

* All indexes are arithmetically converted to a common base, 1926=100.
† These indexes are for North Central States. Except for the reporting of the above 1919 and 1923 only January 1 of each, the figures from 1919 to 1938 are arithmetic averages of the figures for January 1 and July 1 of each year.

Richey Index. Mr. F. S. Haberly, appraisal engineer and successor to Albert S. Richey, does not wish to give "the exact make-up of this index." This index is based on appraisals aggregating about $500,000,000, from which 400 separate price relatives, then composite indexes according to accounts, and finally a "master" index (the one in Table I) are obtained. The weighting procedure is not explained. Because unexplained adjustments are made for improvements in methods of construction and efficiency of construction equipment, it is possible that the weights are changed from time to time.[11]

ICC Indexes. The Bureau of Valuation of the ICC prepares construction-cost indexes for each of the investment accounts of steam railways, for railroads in each of eight regions, and for several types of railroad rolling stock. But indexes are not maintained for each railroad. Price data are obtained chiefly from carriers' experience and manufacturers. Major construction contracts covering a 30-year period as well as joint studies of the ICC and the President's Conference Committee are important sources of information. Indexes for each account are weighted by the "relationship in dollars of each individual account to the total of accounts" (exclusive of land), and base values "were arrived at by taking 1910–14 dollars from the basic engineering reports [under the Valuation Act] with varying dates of valuation from 1914 to 1921." The weighted-relative method with an arithmetic mean of the relatives is used to obtain the composite indexes. The weights are changed apparently from time to time to show retirements from and additions to investment accounts. And some allowances are made for technological changes, e.g., the prices for excavating equipment "reflect power equipment with much greater capacity" in comparison with the slips and wheelers in use before 1915.[12]

Engineering News-Record Index. This index of general construction cost, which is principally of comparative worth here, is the common aggregative type, and it is weighted according to the relative importance of its four components—steel, lumber, cement, and labor.[13] Monthly figures, both 1913 and 1926 being used as base years, are

[11] For the purpose of computing a monthly index "a formula was worked out which now has approximately six elements, and gave a synthetic index which showed close correlation with the master index each year." "Elements" were selected for which monthly prices could be obtained. In this formula an unexplained "factor" was used for adjusting a composite trend of material and labor costs "to that of highly processed machinery." This formula and the indexes were revised in 1932 when "actual" construction costs after 1929 did not conform to the index; the discrepancy was attributed to the weighting process and adjustments of data. The published portion of the new series (1913 = 100) is presented in Table I. (From correspondence with Mr. Haberly, and "Richey Index of Construction Costs," 101 *Electrical World* 105 (January 21, 1933).)

[12] These indexes are published annually in "Construction Costs," *op. cit.* Each of the indexes (1910–14 = 100) for power-plant machinery, manufactured-gas plants (principally gas-producing plants in railroad terminals), and railroad's telegraph and telephone equipment is for a single investment account, whereas the index for all railroads applies to investment accounts 1–46 inclusive. Neither the gas-plant nor telephone and telegraph indexes, however, bear more than a general relation to construction cost of gas or telephone companies' property. The ICC also has prepared indexes for these accounts: power-plant buildings, power-substation buildings, power-substation equipment, power-transmission systems, power-distribution systems, power-line poles and fixtures, and underground conduits. But in these indexes there may be a large measure of approximation, because the same index numbers are reported for power-plant machinery as for substation equipment. (From correspondence with Mr. E. I. Lewis, Director of Bureau of Valuation, Interstate Commerce Commission; Bureau of Valuation of ICC, *Railroad Construction Indexes*, July 1, 1936.)

[13] It is reported annually in "Construction Costs," *op. cit.* and monthly in *Engineering News-Record* and *Survey of Current Business*. To provide a means of computing weights the following were placed on a dollar-value basis, chiefly in 1913—average prices: steel output in 1913, 1916, and 1919; average production of lumber and cement, 1913–16; and the number of common laborers according to the 1910 Census. Consequently, for the purpose of allocating a one-hundred-dollar expenditure in 1913, the following were selected as weights: 2,500 pounds of structural steel, 6 barrels of cement, 600 feet (b.m.) of pine lumber, and 200 man hours. The base price of structural steel at Pittsburgh and the Chicago price for cement (exclusive of dealers' discount) are the prices used. Until 1935 the New York price for long-leaf yellow-pine lumber was used, and since 1935 the average price in 20 cities for carload lots of 2×4 S4S pine and fir lumber has been used; now the weight given lumber is 1088 feet (b.m.). The *Engineering News-Record* compiles its own wage-rate from the data of its own reporters. Before 1937 a 20-city average rate of common labor was used, and now a similar average of skilled labor rates, being considered "more representative of building cost movement," is used; the weight for labor has been changed to 68.38 hours.

available after 1914 and annual averages are available from 1903–14.

Some Observations

For the construction cost indexes in Table I—rough measures of the changes during the past 25 years in the reproduction cost of public utility property—the approximate decline between 1929 and 1932 was 10% to 20%. The *Engineering News-Record* index of general construction cost declined more between these years than any other index given in the table. Otherwise, excluding the inadequate ICC indexes of gas and telephone property, the greatest decrease is shown by the ICC indexes for railroads and power-plant machinery and by Lambert's indexes of electric, manufactured gas, and street-railway plants. The remainder of the indexes generally decreased about 10% or less in these years, the Handy indexes usually showing less downward resiliency than those of any other maker.

Many of these indexes were higher in 1937 and 1938 than they were in 1929, thereby revealing statistical support for the common view that prices of very durable goods do not follow the course of national income or general prices. In fact, several of them had risen in 1938 to, or almost to, their high 1920 levels. Again the *Engineering News-Record* index changed most, rising from 75.4 in 1932 to 113.3 in 1938. Generally the Lambert and Handy indexes rose from 20% to 25% above their lowest depression figures, the exceptions being the Lambert indexes for natural gas and street-railway plants. A notable contrast to these sizable increases is the modest rise of the ICC index for railroads from 76.5 in 1933 to only 85.5 in 1937; this index is still a long way from its high of 128.9 in 1920.

As one might expect for indexes not having been constructed in the same manner and not using like data, there is often a considerable disparity among these 15 indexes. The most obvious common feature of them in the years before 1929 is that they were usually at their high point in 1920 and all of them declined in 1922. Otherwise the results are erratic. Some were falling when others were rising. From 1923 to 1924 the Lambert index for electric plants declined but the Handy and Richey indexes for such plants increased, the Handy index showing an increase of 6.6%. For the same years the Handy indexes of electric-plant parts show an extraordinary increase. From 1924 to 1929 only small disparities appeared in the indexes and none of them changed greatly; there was a 5 to 10% decrease in railroad, water, and street-railway indexes and, by contrast, other indexes showed slight increases.

Only in the case of the Lambert and Handy indexes is there a chance for a comparison according to kinds of plants. Previous observations as well as further inquiry seem to reveal, I believe, that the Handy indexes are more erratic than Lambert's. It has already been noted that there was a greater decline during the depression and greater steadiness during the twenties for the Lambert index for electric plants as compared with the Handy index. Despite these differences as well as the Handy electric-plant index since 1926, the difference, especially when account is taken of the possible uses of such indexes, is not disturbingly large. (Excluding the years 1921 and 1922 the Lambert and Richey indexes for electric plants were remarkably similar until publication of the latter was discontinued.) Though the movement of the Handy and Lambert indexes for manufactured gas plants sometimes diverged greatly before 1924—illustrating, perhaps, even greater inadequacies of such indexes in earlier than in recent years—these indexes are nearly the same for the last 15 years.

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Rate-Making by Interim Order

Because the conditions imposed on public service commissions by courts have made rate regulation a long drawn out process extending in many instances over five or more years, various writers, consumers, and public bodies have frequently criticized the existing methods of rate-making. Out of this dissatisfaction, crystallized by the static condition of rates from 1930–33 while prices of other services and commodities were drop-

ping, arose the temporary-rate-order statutes.[1] Generally speaking, these acts provide for a temporary rate based on a return of 5% on book cost, less depreciation, with certain provisions for recoupment by the utility if, after final determination of the issues, the regulatory body finds that the rate it had fixed under the temporary order was too low. The procedure under these statutes would consist of evidence by the regulatory body based on the company's books, sufficient to make out a prima facie case; the company would then be allowed to cross-examine and offer evidence to rebut this testimony; then the commission would have an opportunity for rebuttal. In these cases only a few, if any, facts are in dispute and a temporary order can be issued a relatively short time after commencement of the hearings.

A recent opinion and order of the Federal Power Commission disclose another method for modifying rates prior to final determination of the case. In that proceeding the company presented its entire case, then the commission introduced its evidence on rate of return, each party cross-examined the others' witnesses on this one issue, and there was rebuttal evidence by the company on this issue. Thereafter, pursuant to a motion filed, oral arguments, etc., the commission issued its "interim" order effecting a substantial reduction in rates pending final outcome of the case. We shall review this opinion and order.[2]

Procedure. In September, 1938, shortly after Congress enacted the Natural Gas Act,[3] the Illinois Commerce Commission filed a petition with the Federal Power Commission alleging that the rates charged by the Natural Gas Pipeline Company of America, hereinafter referred to as the company,[4] were unjust and unreasonable, asking that the company be required to show cause why rates for natural gas sold by it in Illinois should not be reduced and that an order be entered fixing reasonable rates for the sale of natural gas at wholesale to certain distributing companies subject to the jurisdiction of the Illinois Commerce Commission.[5] About the same time the FPC, on its own motion, ordered an investigation of the rates involved. Thereafter the complaint and investigation cases were consolidated for purposes of hearing. Under the procedure adopted by the FPC, the company was required to present its case first; its evidence which covered nearly 6,000 pages of testimony was given by 57 witnesses who also submitted 135 exhibits; hearings were held from May 8, 1939 to October 6, 1939 at which date the company stated that it had concluded its direct testimony. Shortly thereafter company witnesses who testified on *rate of return* were cross-examined. Then the state and federal commissions each presented testimony on rate of return. Thereafter on November 9, 1939 the counsel for both commissions submitted a written motion asking for an "interim" order reducing the rates of the company. A few weeks later the witnesses who testified for the commissions on rate of return were cross-examined; then the company presented its redirect and rebuttal testimony on the same issue.

In December, 1939, oral arguments on the motion for an interim order were heard by the FPC and briefs were filed by all parties. The entire record then consisted of 10,000 pages of testimony and over 200 exhibits.

The motion for an interim order alleges that the evidence then before the commission clearly established that the present rates of the company are unjust and unreasonable and that an immediate order should be entered fixing just and reasonable rates.

Counsel for the FPC asked that for the

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[1] Shortly after the world war it became necessary to grant temporary rate increases; this was accomplished under the general provisions of the public utility acts of the various states; several attempts to reduce rates by summary methods under these acts were unsuccessful. This gave rise to the temporary rate-order statutes. For an excellent discussion of temporary rate statutes see "Note," 87 *U. of Pa. Law Rev.* 456 (1939). See also R. W. Harbeson, "The Supreme Court and Temporary Rate Orders," 15 *Journal of Land & Public Utility Economics* 287 (1939).

[2] *Ill. Commerce Com. v. Natural Gas Pipeline Co. of America, et al.*, FPC Memorandum Opinion No. 49 and Order July 23, 1940 in consolidated Dockets No. G-109 and G-112. The company will no doubt file a petition for rehearing; this may result in a modification of the commission's order.

[3] See "The Federal Natural Gas Act," 14 *Journal of Land & Public Utility Economics* 466–8 (November, 1938).

[4] Two corporations, Natural Gas Pipeline Company of America and Texoma Natural Gas Company are involved in this proceeding but they have been treated as one company and will be so considered here.

[5] For a discussion covering earlier proceedings before the Illinois Commerce Commission involving these wholesale rates see *Natural Gas Pipeline Co. v. Slattery* 302 U.S. 300, 21 P.U.R. (N.S.) 255 (1937).

purpose of disposing of the motion for an interim order the commission accept the following:

"(1) *The companies' estimate* of the life of their source of supply, to wit: 23 years, 1932 to 1954, inclusive.

"(2) *The companies' claim* that they will go out of business when this specific source of supply is exhausted.

"(3) *The companies' book figures* for capital expenditures to date.

"(4) *The companies' estimate* of the total gross capital expenditures over the period 1932 to 1954, inclusive.

"(5) The highest present rate-base figure for the companies' actual properties *testified to by the companies' witnesses.*

"(6) *The companies' estimate* of revenue and operating expenses for the next few years embracing the reasonably immediate future."

Counsel for the company contended, among other things, that the FPC has no jurisdiction under the Natural Gas Act to enter the interim order sought by the motion until all the company's witnesses have been cross-examined by counsel to the Illinois commission and the FPC and shall have been examined on redirect, and until the FPC and the Illinois commission shall have presented all their witnesses and such witnesses have been cross-examined and the company has offered rebuttal testimony.

In finding that the company had been afforded due process of law by a full and fair hearing, the Federal Power Commission concluded:

"The record discloses the companies have been accorded and have properly taken advantage of every opportunity to present all reasonably essential evidence that they desired with respect to every factor bearing on both the jurisdictional and substantive aspects of the problem before us. . . .

"It is quite apparent that the defendant-respondent companies have presented all evidence that they deemed pertinent upon the question of fairness and reasonableness of their rates. The record discloses that throughout the hearings the Trial Examiner was extremely liberal in permitting the introduction of evidence by the companies. Moreover, the companies have had a full opportunity, which they have exercised, to cross-examine all witnesses offered so far by counsel to either commission and to offer all rebuttal testimony in explanation and clarification which they desired with respect to the testimony of such witnesses. They have had full opportunity, which they have exercised, to develop whatever facts they chose on redirect examination of such of their witnesses as have been cross-examined. However, they cannot be heard to complain that they have not yet been able to examine on redirect their own witnesses who have not yet been cross-examined, nor is it essential to a full hearing on the motion before us that they be permitted to cross-examine or rebut witnesses who have not yet been offered by counsel for the commissions. . . .

" . . . We are satisfied that the constitutional requirements of due process have been met. Our view finds complete support in the *New England Divisions Case*, 261 U.S. 184. . . . "

Assumed Rate-Base. The company witnesses claimed the following rate-base:

Reproduction cost new exclusive of gas reserves	$56,302,250
Less "viewed" depreciation	2,866,758
Present value of physical properties exclusive of gas reserves	$53,435,492
Present value of gas reserves	$13,334,775
Allowance for future capital expenditures	6,046,286
Going value	8,500,000
Working capital	975,000
Total	$82,291,553

After stating that it would accept the company's estimate of reproduction cost new, claimed present value of gas reserves, and its claim for working capital, the commission stated that it could not accept, even for the purpose of an interim order, the full claim of the company for future capital expenditures. The company contended that during the period from June 1, 1939 to December 31, 1954, the date when it estimates its sources of gas supply will be exhausted, $9,145,083 will have been expended for capital improvements; of this sum only $6,046,286 was claimed as part of the rate-base by applying the principle of average investment. Although the commission agreed that in fixing rates for the future, reasonable estimates of property additions in the immediate future should be taken into consideration, the commission also felt that such improvements might not, if built, be used and useful. Therefore, it concluded that the estimate of additions for the period June 1, 1939 to December 31, 1942 was ample for the purpose of disposing of the motion. The company's entire estimate of $3,808,399 for this period was allowed.

The commission also disallowed the claim of $8,500,000 for going value on the grounds that it was an arbitrary claim not supported by substantial evidence, and that in any event there was a sufficient allowance in the rate-base to more than adequately cover all elements of value.

The commission disregarded the company's deduction of $2,866,758 for "viewed" depreciation because of the use of the sinking fund method of amortizing the entire investment, which was approved by the commission for the purpose of this motion. It is generally agreed that where the sinking fund

method of depreciation is employed (amortization of investment is used in the instant case in lieu of depreciation and depletion), an undepreciated rate-base is proper.

The total rate-base allowance was $74,420,424;[6] the company's claim was $82,291,553; this may be compared with book cost of properties plus working capital ($975,000) as of December 31, 1939, totalling $60,952,279.

Amortization—Depletion. The company claimed that the present fair value, including estimated value of estimated future capital additions, should be amortized over the remaining estimated life of the gas reserves available to them; the commission rejected this and found that the total investment should be amortized and that the amortization period should be the *total* estimated life of the business, i.e., 23 years rather than the remaining life of the business, i.e., 15 years.

In discussing the investment which is to be the basis for determining the amount to be deducted for amortization and the rate of interest on the sinking fund, the commission said:

"The amortizable investment is the total investment estimated to be made during the life of the companies, less the salvage value at the end thereof. For the purpose of disposing of the motion before us we accept the claim of the companies that this investment will amount to $78,284,009, inasmuch as the amount subject to amortization is the total investment during the life of the enterprises, it follows that the amortization period should be the same period, namely twenty-three years (from 1932 to 1954).

"The record discloses that evidence was introduced showing the applicability of the sinking fund method of amortization to the facts herein. The companies claim the interest rate in the sinking fund formula should not exceed two per cent. However, we feel that 6¼ per cent should be used. Where an interest rate lower than the allowed rate of return is used, unjust enrichment of the companies at the expense of the consumers is a most likely result. Under the sinking fund method, consumers are given no credit by way of a reduced rate-base for the amortization expense which in effect is charged against them. If, therefore, a rate of return of 6¼ per cent is fair and equitable for the company, by the same token it would seem to be fair and equitable in computing the amortization to be charged as an operating expense under the sinking fund formula. We will use that rate.

"The annual amortization expense on an investment of $78,284,009 for a period of 23 years, at the 6¼ per cent sinking fund rate, is $1,557,852. We allow that amount."

Rate of Return. As stated above, both commissions submitted testimony and exhibits covering rate of return. The commission witnesses were cross-examined by the company which also presented redirect and rebuttal testimony on this issue. The commission, relying in part on the Bluefield case (262 U.S. 679) which discussed comparative investments, stated that it would allow, for purposes of this order, a return of 6½% on the adjusted rate-base:

"It is interesting to note that the defendants-respondents [company] do not ask that we find a *fair rate of return* but assert 'a minimum of eight per cent should be allowed defendants as a just and reasonable return on the value of their property.' An expert for the Illinois Commerce Commission testified that a fair return for these companies 'did not exceed six per cent.' The brief of counsel to this Commission states that 'the fair rate of return is six per cent—and in no event should it exceed 6¼ per cent.' . . . for the purpose of disposing of the motion before us, . . . 6¼ per cent is a fair annual rate of return upon the rate-base allowed."

Of interest is some of the reasoning of the commission in arriving at this rate, since it is one of the few pronouncements on rate of return for wholesale companies:

"Ample evidence of record indicates that the companies would have no difficulty in financing at a low cost if they restricted their securities to a proper amount, with reasonable ratio of bonds, preferred and common stock. There is substantial evidence of record indicating that the companies could finance on as favorable a basis, if not a more favorable basis, than any natural gas producing and transmission company in the United States. There is testimony of record indicating in this connection that with earnings of 6.2 per cent to 6.5 per cent a sound pipeline company could easily finance on a basis of 40 per cent bonds, 20 per cent preferred stock, and 40 per cent common stock, with yield or return to the public of 3.5 on the bonds, 5.75 per cent on the preferred and 8 per cent on the common stock. The cost of money to such company would be 3.75 per cent for the bonds, 6.10 per cent for the preferred, and 10 per cent cost of floating the common stock. On such basis of financing, the interest coverage would be 4.68 times."

Undoubtedly this order will be reviewed by the United States Supreme Court. It will be interesting to note whether that Court sustains the "interim order" as a regulatory device. If it does, the method will no doubt be followed by other federal as well as state commissions.

Assistant Attorney General, State of Illinois A. L. STEIN

[6] This was computed as follows:

Reproduction cost new of physical properties (exclusive of gas reserves)	$56,302,250
Value of gas reserves	13,334,775
Capital additions for the period June 1, 1939 to December 31, 1942	3,808,399
Working capital	975,000
Total Rate-Base	$74,420,424

Book Review Department

Urban Land

Drellich, Edith Berger and Emery, Andree. RENT CONTROL IN WAR AND PEACE. *New York: National Municipal League, 1939. pp. 124. 50 cents.*

This book, a study prepared for the Laws and Administration Committee of the Citizens' Housing Council of New York and published by the National Municipal League because of its general interest, assumes added significance in view of the wars abroad and their effect on American economy. It seems inevitable that the industrial expansion brought about by our national defense program will add to or create housing shortages in many localities. And it is entirely possible that these shortgages will drive rents up to the point where they constitute a harsh burden on large numbers of families, notwithstanding the fact that the Federal Government is already taking steps to expedite housing projects where they are needed to supplement the defense program. The foresight of the Citizens' Housing Council in anticipating the need for new rent control measures and preparing its recommendations in advance may thus bear fruit—unfortunately so, one might add.

Specifically, nine recommendations are listed, among which are the following: that rent control should become operative in times of housing shortage accompanied by excessive increases in rents; it should be established by legislation, and should apply to emergencies wherever and whenever they arise, "emergency" being defined in the law; local public rent boards should be established to formulate rent control procedure in detail and administer it; mandatory surveys should be undertaken periodically to make possible the prompt determination of an emergency; prevention of speculative increases and the establishment and maintenance of fair rents should be the objective, "fair rents" being determined according to a valuation in terms of "prudent purchase price in normal times"; and fair rent courts should also be set up. A detailed study of the operation of rent control measures in this country during the years 1917–1929 and a short sketch of the present housing shortage comprise the bulk of the book.

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Mandel, H. Robert. REAL ESTATE MANAGEMENT. *New York: Ronald Press Co., 1939. pp. 218. $4.00.*

This book should find a definite place in the still all too meager collection of literature dealing with the business of property management. Starting with a discussion of the great variety of duties performed today by the well rounded management office, Mr. Mandel draws upon the rich experience of a successful metropolitan firm to present his subject. True, the approach is almost entirely along the lines of apartment building management, and to the extent that it does not deal adequately with the peculiar problems of loft and office building operation, such as office layout, percentage leases, etc., the book lacks specific application. Also, in any study which sets out to cover so wide a field within limited space, there arise questions of emphasis with which the individual reader may disagree. For example, a more thorough discussion of the important problem of real estate tax assessments and tax rates, and the agent's responsibility in connection therewith, might have been included to advantage.

Emphasis, however, is not so important here as is the fact that the author has brought together for intelligent examination the several aspects of urban real estate management. The organization of the agency office itself, the many details which must be given constant attention in the physical operation of any large building, and the relationship of agent to tenant are all fully discussed.

Perhaps the greatest usefulness of the volume will be found by those conducting courses in property management. Heretofore the instructor has had to rely for collateral reading assignments on an assortment of magazine articles, monographs, and one or two books long out of print and available only in libraries. With the publication of this volume, however, he now has available an

"up to date" textbook that will provide continuity and background for the entire course. Certainly the book should be part of the library of every firm managing real estate, and might well be made required reading for every young man embarking on a career in a management office. It can also be read profitably by the owners of commercial real estate; from it they will not only gain a better understanding of their agents' problems, but it will give them as well a sound basis for judging the efficiency of the particular agent's organization.

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Land Resources

Murray, William G. FARM APPRAISAL. *Ames, Iowa: Iowa State College Press, 1940. pp. ix, 254. $2.25.*

Because no generally accepted appraisal system is used in America, American rural appraisers have long felt the need for a book dealing with the theory and practice of farm real estate appraisal. Mr. Murray says that the fact that more than one method of appraisal is now in use should not be disturbing to the reader. He is of the opinion that if different points of view did not exist there would be less hope for progress in solving the difficult problems of farm appraisal.

In presenting the principles of appraisal the author follows each step in actual appraisal procedure. In the first part of the book he deals specifically with principles and procedure of obtaining a complete description and inventory of the physical characteristics of the land and buildings. He shows how an accurate appraiser's report can enable even one who has not seen a farm to visualize it in detail. He believes that an appraisal map can best present the relation of the physical properties of the farm to productivity rating. Appraisers agree that it is necessary to examine and analyze the physical make-up of the farm before they can arrive at an accurate value.

In the second part of the book Mr. Murray discusses the methods of translating the physical inventory into dollar value. He says that valuation, the final step in appraisal, may be made by the income method, the sales-comparison method, or by a combination of the two. Since income value and sales value remain at the same level except for short periods of variation, it is obvious that there must be some fundamental connection between them. This relationship according to Mr. Murray exists because sales value is based on farm-product prices. Sales value is the most accurate estimate of the future income from land which buyers and sellers can make. Sales price includes the price paid for the amenities—for church, school, proximity to church and school, type of road, attractiveness of the farmstead, nationality and composition of the community, and intangibles which will be weighed by the buyer and seller.

Mr. Murray points out that there is little or no disagreement about the appraisal of farm productivity, but that opinions diverge on the best method of converting production estimates into value. On the one extreme are those who favor the use of sales price or sales value as "bench marks," or standards of appraisal; at the other extreme are those who would determine value by the capitalization of net rental income. In their connection with the price level, these two methods have a common basis. The income approach rests upon the arbitrary choice of a price level for farm products. The sales-value approach depends upon the selection of a level of values either higher or lower than, or the same as, the present level. This point is vital because the sales value, on whatever level it be, is associated with a level of farm-product prices.

In conclusion, Mr. Murray says that no single method of appraisal is likely to be suitable for all types of farms, or in all sections of the country. He feels that an appraisal policy allowing flexibility in method might be an acceptable solution. Such a policy might call for the use of both income and sales-value methods in each appraisal. The author stresses the importance of comparison, a feature so fundamental that it might well be considered an indispensable part of every appraisal. Each appraiser may help in arriving at a uniform method both by comparing each farm he appraises with those he has previously appraised, and by comparing his appraisals and his appraisal methods with those of other appraisers.

Farm Appraisal is a valuable contribution to appraisal literature. It will be of assistance to rural appraisers and to teachers of farm appraisal. A study of this text, as of any

pioneering text, reveals the need for further research, particularly with regard to factors related to productivity and value.

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Public Utilities

Lutz, Harley L. THE TAXATION OF RAILROADS IN NEW JERSEY. *Princeton: Princeton University Press, 1940. pp. viii, 208. $2.50.*

Here at last is a clear and understandable analysis of the problems of railroad taxation in a state where railroad taxation has become almost incomprehensible. Professor Lutz outlines the development of such system as they have in New Jersey, analyzes its operation and results, makes concrete criticisms, and offers practical proposals for reconstructing the whole system of railroad taxation in the state. Since the problems are somewhat similar in most of the states, Professor Lutz's study will be a valuable contribution to the general problem of railroad taxation.

The section of most immediate interest to students in this field will probably be Chapter III, which is "A Criticism of the *ad valorem* Theory of Railroad Taxation." This is a penetrating analysis of the theoretical aspects of the problem, though there will naturally be some disagreement with regard to final conclusions. The writer would offer two criticisms here.

1st. Those who so scathingly reject the ad valorem taxation of railroads, on the ground of the impossibility of ascertaining the "true value" of the roads, all seem to imply (perhaps they don't mean to) that the "actual" and "true" value of *other property* is something that can be handily ascertained. Professor Lutz speaks of railroad valuations as being "in the realm of fiction" and quotes Professor Bonbright's reference to "pseudo-valuations used by the assessors." The writer happens to be somewhat familiar with valuations in both fields and would be inclined to feel that there is probably as much "fiction" and "pseudo-valuation" in the assessment of real estate and general property as in the case of the railroads. Moreover, he would hazard the conjecture that, if the railroads were really valued systematically and uniformly, year in and year out, on the basis, say, of capitalization of earnings and market value of securities, free from political pressure and intentional manipulation, the result over a period of years would be nearer to "true value" than are the present assessments of property in general.

2nd. Professor Lutz's condemnation of the use of market value of securities seems to the writer entirely too severe. For instance, the customary criticism that dealings in the market represent only a small part of the total capitalization of the railroads, we supposed had been disposed of. Professor Lutz says:

> "The price that one investor, or a group of investors, would pay for a certain proportion of the equity or the debt is no guide whatever to the price they would pay if their object was to acquire the whole property."

The price paid for wheat at a given time or over a given period is no guide to the price one would have to pay if he set out to buy up the whole crop. Yet the Department of Agriculture constantly uses these quotations in its valuation of the wheat crop and other crops. Even the prices paid for urban frontage are no guide to what one would have to pay if he undertook to buy up all the frontage at one time. Yet we use these prices in determining the basic "standard unit values" for purposes of so-called scientific assessment.

Professor Lutz points out that stock market buying is not always "intelligent." But neither is the buying of real estate or anything else—as most of us have learned to our sorrow. But it is the dealings of these buyers and sellers—intelligent and unintelligent—that make market values what they are, and it is this market value that we are trying to get at.

Professor Lutz holds (p. 91) that

> "At best, it is simply another way of giving consideration to the income factor, and for the reasons brought out below, it is a less satisfactory method of doing this than that of capitalizing the income itself."

Yet Professor Lutz himself further along criticizes market values because they reflect the influence of fears, rumors, and other "forces extraneous to the market itself." Here we would point out (a) that these forces are not really extraneous to the market—these are the forces that make markets in every field; (b) that it is the market's ability to reflect these and other

forces that *differentiates market values from a simple capitalization of earnings;* and (c) that it is this same ability of the market to reflect considerations of all kinds that *makes* market prices an important index of value.

With Professor Lutz's proposals for reform of railroad taxation, including the substitution of a gross earnings tax for ad valorem taxation, we presume most students in this field will agree, and will wish him success in his practical efforts to secure their adoption in New Jersey. We can waive some minor theoretical differences for such an achievement as that.

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Healy, Kent T. THE ECONOMICS OF TRANSPORTATION IN AMERICA. *New York: Ronald Press Co., 1940. pp. xviii, 595. $4.*

Transportation has long been a favorite subject of economists. So many books have been written on the subject that it is easy to find a great deal of parallelism both as to content and style. Originality is often sought but seldom gained.

For at least three good reasons, however, Mr. Healy's *Economics of Transportation* will appeal both to the student and to the individual engaged in transportation. First, it contains a comprehensive treatment of recent economic developments—cost studies in competitive rate-making, for example. Second, it is organized functionally rather than historically, clearly separating such aspects as consumer demand, building of facilities, pricing, finance, management, labor, and regulation. Finally, the spirit of inquiry avowed by the author in his preface seems well maintained throughout, with conclusions well bridled to the facts and with a notable absence of prejudice.

The book opens with a 35-page thumb-nail sketch of transportation history from early highways and canals to pipe lines and air transportation. Following the historical introduction the book is divided into four parts: (1) The Demands for Transportation in Economic Society—consumer demand for transport of things and of people; (2) The Building of the Nation's Transportation Facilities—opening with a discussion of technological progress and following with the evolution of highway, waterway, railway, and airway facilities; (3) The Functioning of Transportation Facilities–opening with 66 pages devoted to comparative transportation costs by highway, pipe line, waterway, airway, and railway, followed by pricing policies and rate-structures, finance, management and labor (Some excellent recent data are presented in this part.); and (4) The Economic Regulation of Transportation by Government—opening with the development of railway regulation and regulation of other carriers and then presenting the results of economic regulation on railroad rate-structures, finance, and operation, followed by a brief treatment of the more recent results of the regulation of other than rail carriers.

In introducing the fourth and final part of his treatise entitled "Economic Regulation of Transportation by Government," the author significantly comments that in any study of transportation economics the regulatory function is very likely to come in for the lion's share of the discussion primarily because of the vast amount of readily available documentary evidence on regulation as compared with management, labor, and related phases of applied transportation. Rather than stress the legal problems of regulation Mr. Healy attempts to emphasize the "derived economic aspects of it."

Students of transportation as well as those actually engaged in some phase of the industry will appreciate the scientific attitude of the author in arriving at his conclusions which, at least to the reviewer, seemed in all cases to be well fortified by the facts, yet stimulatingly constructive. For example, after describing the development of motor-carrier regulation he says:

> "The true public interest would seem best served if regulation in its inter-carrier ramifications were restricted to keeping rates in line with costs, preventing restriction of smaller carriers by the larger ones, and facilitating interchange between carriers when cost and service possibilities make it desirable."

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